

Including: Agenda items 10 (North Lake Mechant) through 10 (Grand Lake Shoreline Protection)

Breaux Act

COASTAL WETLANDS, PLANNING, PROTECTION AND RESTORATION ACT



Task Force Meeting

OCTOBER 13, 2004

Baton Rouge, Louisiana

BREAUX ACT
COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
TASK FORCE MEETING
AGENDA

October 13, 2004 9:30 a.m.
LA Department of Wildlife and Fisheries -- Louisiana Room
2000 Quail Dr., Baton Rouge, La.

Documentation of Task Force and Technical Committee meetings may be found at:
http://www.mvn.usace.army.mil/pd/cwppra_mission.htm or
<http://lacoast.gov/reports/program/index.asp>

- | Tab Number | Agenda Item |
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-
1. **Meeting Initiation: 9:30 a.m. to 9:40 a.m.**
 - a. Introduction of Task Force members or alternates.
 - b. Opening remarks of Task Force members.

 2. **Adoption of Minutes from August 18, 2004 Task Force Meeting: 9:40 a.m. to 9:45 a.m.**

 3. **Status of Breaux Act Program Funds and Projects (Browning): 9:45 a.m. to 9:55 a.m.**

Ms. Gay Browning will discuss the construction program and status of the CWPPRA accounts.

 4. **Decision: FY05 Planning Budget and FY05 Public Outreach Committee Budget Approval (Saia/Wilson) 9:55 to 10:10 a.m.**
 - a) The Technical Committee recommends a FY05 Planning Budget for the upcoming fiscal year in the amount of \$4,738,129.

 - b) The CWPPRA Public Outreach Committee will present the FY05 Public Outreach Committee Budget to the Task Force and request approval of \$437,900 for the 2005 Outreach Committee Budget.

 5. **Decision: Recommendation to Restrict Phase II Budget Requests for Projects Already Approved for Phase II But Not Yet Under Construction to a Cap of 100% (Including Contingency) (Saia) 10:10 a.m. to 10:20 a.m.** Due to the limited available CWPPRA funds for ongoing approved Phase I and II CWPPRA projects, it is recommended that the 125% cap be lowered to 100% to avoid developing a negative "un-programmed" balance in the CWPPRA program budget and to allow the Corps of Engineers to better estimate available funds in the program. The Technical Committee recommends the Task Force restrict Phase II budget requests for projects already approved for Phase II but not yet under construction to a cap of 100%.

 6. **Decision/Discussion:**
 - a) **Discussion and Decision Regarding Future Operation and Maintenance (O&M) Funding for Non-Cash Flow Projects that have Depleted Their 20-Year O&M Budget (Rowan) 10:20 a.m. to 10:30 a.m.**

Option 1: Consider requests of remaining 20-year O&M funding on a non-cash flow basis for individual projects, as funds are needed

Option 2: Consider requests of 3-year incremental funding of O&M funding on a cash flow basis for individual projects, as funds are needed.

- b) **Consider Requests for Operation and Maintenance (O&M) Funding Increases on Priority Project Lists (PPL) 1-8 (Saia) 10:30 a.m. to 10:40 a.m.** The Task Force will consider the request for O&M cost increases for projects on PPL's 1-8, in the amount of \$935,000. The Technical Committee recommends to the Task Force an increase of \$935,000 in O&M funding.

- 7. **Decision: Request for Funding for Administrative Costs for those Projects Beyond Increment 1 Funding (Saia) 10:40 a.m. to 10:45 a.m. (Saia)** The U.S. Army Corps of Engineers is requesting \$21,915 funding approval for administrative costs for those projects beyond Increment 1 funding. The Technical Committee recommends to the Task Force approval of \$21,915 for funding for administrative costs.

- 8. **Decision: Request for FY08 Coastwide Reference Monitoring System (CRMS)-Wetlands Monitoring Funds and Project Specific Monitoring Funds for Projects on PPLs 9-13 (Saia) 10:45 a.m. to 10:55 a.m.** Following a presentation on the status/progress of CRMS over the past year by Mr. Rick Raynie, the following requests will be discussed by the Task Force:

- a) project specific monitoring funding beyond the first 3-years for projects on PPL's 9-11 (in order to maintain a 3-year rolling amount of funding) in the amount of \$91,563.
- b) CRMS FY08 monitoring request in the amount of \$532,000.

The Technical Committee recommends to the Task Force approval of \$91,563 for project specific monitoring and \$532,000 for FY08 CRMS.

- 9. **Decision: Request for Re-allocation of Funds for Construction Unit 4 for the Barataria Basin Landbridge Shoreline Protection, Phases 1 and 2 (BA-27) (Saia) 10:55 a.m. to 11:10 a.m.** BA-27 is a non-cash flow project. The Natural Resources Conservation Service and the LA Department of Natural Resources are seeking a re-allocation of \$1,510,563 of the existing remaining BA-27 budget to the BA-27 portion of Construction Unit 4. This amount is an increase above 125% of the approved amount for the BA-27 portion of Construction Unit 4. The Technical Committee recommends to the Task Force approval to re-allocate \$1,510,563 for BA-27.

- 10. **Decision: Request for Construction Approval and Phase II Authorization for Projects on all PPL's (Saia) 11:10 a.m. to Noon and 1:30 p.m. to 4:10 p.m.** The Task Force will consider requests for construction approval and Phase II approval for projects on all PPL's. The Technical Committee reviewed and took public comment on September 9, 2004 on the twelve projects shown in the table, and recommends approval of four projects and one demonstration project to the Task Force within available FY05 funding (see table). With approval of these five projects, it is estimated that approximately \$24.6 million in Federal funding may still be available for additional funding approvals for FY05. The Task Force will consider the Technical Committee's recommendation and make a final decision on construction authorization or funding approval for FY05.

The projects in the table below will be individually discussed by the sponsoring agency, the Task Force and the general public as shown below:

- a) Agency presentation on individual projects
- b) Task Force questions and comments on individual projects
- c) Public comments on individual projects (Comments are requested to be limited to 3 minutes)

| Recommended Approval by Technical Committee | Agency | Proj No. | PPL | Project | Constr Start | Phase II, Incr 1 Funding Request | Phase II Total Cost | Acres over 20 years | Prioritization Scores | Prioritization "Rank" | 30% Design Review Meeting Date | 95% Design Review Meeting Date |
|---|--------|----------|-----|--|--------------|----------------------------------|---------------------|---------------------|-----------------------|-----------------------|--------------------------------|--------------------------------|
| X | NRCS | BA-27 | 8 | Barataria Basin Landbridge, Ph 1&2 - CU 5* | Jun-05 | \$7,441,870 | \$7,441,870 | 721 | 77.25 | 1 | 20 Aug 03 (A) | 2 Sept 04(A) |
| | NRCS | BA-27c | 9 | Barataria Basin Landbridge, Ph 3 - CU 5 | Jun-05 | \$12,069,203 | \$14,074,159 | 180 | 45.55 | 8 | 20 Aug 03 (A) | 2 Sep 04 (A) |
| | COE | TV-11b | 9 | Freshwater Bayou Bank Stabilization - Belle Isle Bayou to Lock | Jan-05 | \$13,827,382 | \$15,697,763 | 241 | 42.50 | 10 | 27 Jun 02 (A) | 22 Jan 04 (A) |
| X | FWS | ME-16 | 9 | Freshwater Introduction South of Hwy 82 | Jun-05 | \$4,323,846 | \$5,444,187 | 296 | 57.35 | 6 | 14 May 03 (A) | 11 Aug 04 (A) |
| | NRCS | TE-39 | 9 | South Lake DeCade - CU 1 | Jun-05 | \$2,511,857 | \$3,431,285 | 207 | 73.45 | 2 | 19 Jul 04 (A) | 2 Sep 04 (A) |
| | NRCS | TE-43 | 10 | GIWW Bank Rest of Critical Areas in Terre | Jun-05 | \$20,434,224 | \$23,641,525 | 366 | 43.25 | 9 | 14 May 03 (A) | 26 Aug 04 (A) |
| | FWS | TE-44(2) | 10 | North Lake Mechant - CU 2 | Feb-05 | \$27,400,960 | \$29,344,846 | 553 | 53.10 | 7 | 7 May 03 (A) | 12 Aug 04 (A) |
| | FWS | BA-36 | 11 | Dedicated Dredging on Barataria Basin LB | Jun-06 | \$33,730,712 | \$33,855,606 | 605 | 61.00 | 5 | 17 Dec 03 (A) | 29 Jul 04 (A) |
| | COE | ME-21 | 11 | Grand Lake Shoreline Protection | Jan-05 | \$12,404,517 | \$14,155,779 | 540 | 66.25 | 4 | 14 May 04 (A) | 16 Aug 04 (A) |
| X | NRCS | TE-48 | 11 | Raccoon Island Shoreline Protection, Ph A (CU1) | Jun-05 | \$6,451,765 | \$6,781,037 | 16 | 42.00 | 11 | 19 Jul 04 (A) | 2 Sep 04 (A) |
| X | COE | ME-22 | 12 | South White Lake | Jan-05 | \$14,122,834 | \$18,085,844 | 844 | 66.40 | 3 | 30 Jun 04 (A) | 3 Sep 04 (A) |
| X | COE | LA-06 | 13 | Shoreline Protection Foundation Improvements Demo ** | Jan-05 | NA | NA | NA | NA | NA | NA | NA |

TOTAL: \$154,719,170 \$171,953,901

* An increase of \$7,441,870 is needed for this non-cash flow project. Total Phase II cost is \$10,035,500.

** The sponsors are seeking construction approval for this demo, which will be constructed in conjunction with South White Lake SP Project

11. **Announcement: PPL 14 Public Meetings (LeBlanc) 4:10 p.m. to 4:15 p.m.** Public meetings will be held in November to present the results of the PPL14 candidate project evaluations. The meetings are scheduled as follows:

November 17, 2004 7:00 p.m. Vermilion Parish Police Jury Courthouse Bldg, Abbeville, LA

November 18, 2004 7:00 p.m. U.S. Army Corps of Engineers (DARM - A) New Orleans, LA

12. **Due to the length of the meeting the Task Force deferred Item 12 until next Task Force meeting.**
Report: Public Outreach Committee Annual Report (Bodin) 4:15 p.m. to 4:30 p.m. Ms. Bodin will present the Public Outreach Committee's Annual Report.
13. **Due to the length of the meeting the Task Force deferred Item 13 until next Task Force meeting. It was requested that relevant documents for this item be sent by email to the Task Force and Technical Committee as soon as possible.**

Report: Preliminary Damage Assessment from Hurricane Ivan (Broussard/Burkholder)
4:30 p.m. to 4:40 p.m.

- 14. Additional Agenda Items 4:40 p.m. to 4:45 p.m.**
- 15. Request for Public Comments 4:45 p.m. to 4:50 p.m.**
- 16. Announcement: Date and Location of the Next Task Force Meeting (LeBlanc) 4:45 p.m. to 4:50 p.m.** The next meeting of the Task Force is scheduled for 9:30 a.m., January 26, 2005 in New Orleans, Louisiana.
- 17. Proposed Dates of Future Program Meetings (LeBlanc) 4:50 p.m. to 4:55 p.m.** Several schedules changes are proposed for the CWPPRA program in 2005 to better accommodate the 2006 funding approval process. Changes are indicated below from the previously announced schedule.

** Schedule or location changes*

| | | | |
|----------------------------|-----------|-----------------------|--------------------|
| December 16, 2004 | 9:30 a.m. | Technical Committee | New Orleans |
| January 26, 2005 | 9:30 a.m. | Task Force | New Orleans |
| March 16, 2005 | 9:30 a.m. | Technical Committee | New Orleans |
| April 13, 2005 | 9:30 a.m. | Task Force | Lafayette |
| *June 15, 2005 | 9:30 a.m. | Technical Committee | Baton Rouge |
| *July 13, 2005 | 9:30 a.m. | Task Force | New Orleans |
| August 30, 2005 | 7:00 p.m. | PPL 15 Public Meeting | Abbeville |
| August 31, 2005 | 7:00 p.m. | PPL 15 Public Meeting | New Orleans |
| *September 14, 2005 | 9:30 a.m. | Technical Committee | New Orleans |
| *October 19, 2005 | 9:30 a.m. | Task Force | New Orleans |
| *December 7, 2005 | 9:30 a.m. | Technical Committee | Baton Rouge |
| *January 25, 2006 | 9:30 a.m. | Task Force | Baton Rouge |

Proposed New Schedule

| | | | |
|--------------------|-----------|-----------------------|-------------|
| March 15, 2006 | 9:30 a.m. | Technical Committee | New Orleans |
| April 12, 2006 | 9:30 a.m. | Task Force | Lafayette |
| June 14, 2006 | 9:30 a.m. | Technical Committee | Baton Rouge |
| July 12, 2006 | 9:30 a.m. | Task Force | New Orleans |
| August 30, 2006 | 7:00 p.m. | PPL 16 Public Meeting | Abbeville |
| August 31, 2006 | 7:00 p.m. | PPL 16 Public Meeting | New Orleans |
| September 13, 2006 | 9:30 a.m. | Technical Committee | New Orleans |
| October 18, 2006 | 9:30 a.m. | Task Force | New Orleans |
| December 6, 2006 | 9:30 a.m. | Technical Committee | Baton Rouge |
| January 31, 2007 | 9:30 a.m. | Task Force | Baton Rouge |

Adjourn

Phase II Authorization Request

North Lake Mechant Landbridge Restoration Project (CU-2)

TE-44

(Revisions made at the request of the CWPPRA Technical Committee are presented in Attachment 3)

Description of Phase I Project

The North Lake Mechant Landbridge Restoration Project was approved for Phase I funding by the CWPPRA Task Force on the 10th Priority Project List. The purpose of the project is to protect and restore marshes along the north shore of Lake Mechant and the Small Bayou La Pointe Ridge. Those marshes form a critical land bridge barrier between the easily erodible fresh marshes to the north and the brackish waters and marine processes of Lake Mechant to the south. The steep salinity gradient in the project area demonstrates the important hydrologic restriction function performed by this landbridge. The integrity of the landbridge is threatened by a combination of shoreline erosion, interior marsh loss, and several channels and canals that allow flow through the landbridge.

Anticipating delays in the design and implementation of several of the project features, the Breaux Act Task Force on August 7, 2002, authorized implementation of the vegetative plantings component of the project ahead of the other features as a separate construction unit. Over 43,000 linear feet of saltmarsh cordgrass, consisting of 10,000 trade gallons and 20,000 plugs, were planted along the shores of Lake Mechant and Lake Pagie in May, 2003.

At the time of Phase I authorization, project features (excluding the vegetative plantings) included (see Attachment 1):

1. Hydraulically dredge lake-bottom soil to create 534 acres of marsh in 10 separate areas. Potential borrow sites included Lake Mechant, Goose Bay and Lake Pagie.
2. Construct 22,324 linear feet of earthen containment dike and 29 small plugs.
3. Construct 5,996 linear feet of armored containment dike.
4. Construct 3 steel sheetpile plugs.
5. Construct 1 armored earthen plug.
6. Construct 1 rock plug.
7. Armor 610 linear feet of existing spoil bank.
8. Repair one fixed-crest weir.

The Wetland Value Assessment conducted for the Phase I project estimated a benefited area of 8,877 acres and the net creation/restoration of 553 acres of marsh attributed to CU-2 features at the end of the project life.

At the time of Phase I approval, the fully-funded project cost was \$26,008,700. That figure included \$1,880,671 for Phase I and \$23,605,509 for Phase II. The cost breakdown for Phases I and II (at the 100% level) is presented in the following table.

In order to facilitate the design of the marsh creation areas, plug features, and shoreline protection a topographic survey was completed on June 21, 2002 by ABMB Engineers, Inc. After further project development and addition of new project features, it was decided to obtain another survey which was also completed by ABMB Engineers, Inc. on October 13, 2003. The transect intervals for the marsh creation fill areas were either 250 or 500 feet. Borrow-area transects taken in Lake Mechant were spaced at 1000-foot intervals. Lake-bottom elevations were collected directly using a 4 meter antenna pole and a GPS Real-Time Kinematic (RTK) device. This method eliminated the need for any corrections due to water level or wave heights. Other survey transects were taken at irregular intervals specific to individual project features.

To determine the suitability of the soils in the TE-44 project area for the various proposed construction alternatives, Coastal Engineering Division (CED) contracted with Soil Testing Engineers, Inc. (STE) who completed a soils investigation on October 31, 2002. STE was tasked to collect soil borings, perform laboratory tests to determine soil characteristics, calculate settlement of all structures including the dredge fill for different fill elevations, perform stability analyses on the plugs and shoreline protection features, and determine a cut to fill ratio for dredge and fill operations.

A total of seventeen subsurface borings were drilled in the project area from July 29 – August 7, 2002 by STE as shown in Figure 2. Fourteen borings were drilled to a depth of 25 ft and three borings were drilled to a depth of 60 feet. The soil samples were tested in the laboratory for classification, strength, and compressibility. Settlement and slope stability analyses were performed for all of the project features.

In order to locate pipelines and other potential obstructions to construction activities, CED contracted with Neel-Schaffer, Inc. to perform a magnetometer survey in the project area. The survey was completed on November 13, 2003. The data was collected using a G-881 Cesium marine magnetometer. Magnetometer lines were run within the dredging borrow area and in all other areas where dredging or equipment access is anticipated. Where “mag hits” were interpreted as possible pipelines or major obstructions, a probe was used to identify the object and determine its depth.

Hydraulic calculations performed during the design of this project included historical water level and design wave height determinations. These values were used in the design of all project features, including a determination of armoring needs along Raccourci Bay and Lake Pagie.

Design meetings were held at the 30% (May 7, 2003) and 95% (August 12, 2004) levels. A revised fully-funded cost estimate was prepared by the CWPPRA Economics Work Group on August 26, 2004.

Landrights, Cultural Resources, Environmental Compliance and Other Tasks

Preliminary landrights with both landowners and affected utilities and pipelines has proceeded smoothly and no problems are anticipated in acquiring final landrights (see separate section regarding oysters).

A March 6, 2002, review by the Louisiana Office of Cultural Development, Division of Archeology, revealed two recorded prehistoric archaeological sites (shell middens) within the project area; both are located along the eastern shore of Lake Pagie. One of the two sites was identified by the State Historic Preservation Officer as ineligible for listing on the NRHP. The eligibility of the second site was unknown. Consequently, a Phase One resources survey was conducted at the site by Surveys Unlimited Research Associates, Inc. That survey concluded that no surface sign of either site remains, their only manifestations being shells extending westward from the east shore of Lake Pagie. Consequently, the Louisiana Department of Culture, Recreation and Tourism has indicated that they have no objections to project implementation.

Permits for the project are required under Section 404(b)(1) of the Clean Water Act of 1977, as amended, as well as state Water Quality Certification (under Section 401 of that Act.) Those permits, along with a consistency determination from the Coastal Management Division of DNR, have been obtained. However, due to small design changes, such as changes in access channel alignments, a modification to the existing permit will be requested prior to construction.

An overgrazing determination provided by the Natural Resources Conservation Service indicated that overgrazing is not a problem in the project area. An HTRW assessment conducted by the Lafayette Field Office of the U.S. Fish and Wildlife Service indicated that no HTRW materials should be encountered during project implementation.

A draft Ecological Review is available and a draft Environmental Assessment will be released for public comment at least 30 days before the October 13, 2004 Task Force meeting.

Oyster Leases

Engineering and design of this project were delayed while the CWPPRA oyster acquisition policy was developed and implemented. All affected leases within the project area have been surveyed and appraised. Letters indicating the appraised value of the affected leases (or portions of leases) have been sent out to the lease holders. Based on the positive responses received from lease holders to offers in another project in Terrebonne Parish, and the fact that many of those same leaseholders are involved in this project, the outlook on being able to clear these leases is good. The combined appraised value of the oyster leases is \$75,550. The phase II budget to pay for those leases is \$446,245. Therefore, although the leases are not yet cleared, we do not expect that construction will be further delayed by this issue.

Description of the Phase II Candidate Project

Project Features

Project features are described below. See Attachment 2 for a map of the project features.

1. Create 526 acres of marsh in 8 separate cells. Material will be hydraulically dredged from the northern end of Lake Mechant and placed in semi-confined containment cells. Where possible, cells will rely on existing landscape features to provide some of the needed containment (such as the natural levee of Small Bayou La Pointe, the berm along the Lake Mechant shoreline, and spoil banks along existing canals). Where no existing containment features exist, containment dikes would be constructed (generally in interior marshes and along degraded sections of shoreline) to retain the dredged material long enough to allow consolidation. All dewatering sites will be located in the marsh interior to avoid release of sediment into open water bodies. Containment dikes exposed to erosive wave action along Raccourci Bayou will be protected with articulated concrete mat armoring. Several existing small channels along the Lake Mechant and Lake Pagie shorelines will be plugged with earthen plugs to prevent the loss of dredged material. Containment dikes will be degraded three years after construction, if needed to allow the natural exchange of material and organisms.

Marsh elevations in the project area were measured at between 0.6 and 1.1 feet North American Vertical Datum (NAVD 88; all elevations herein are reported in NAVD 88). Mean low water was measured as 0.27 feet and mean high water was measured at 1.45 feet. The target elevation of 3.0 feet for the marsh-creation cells is based on the amount of consolidation expected in the dredged material over time. The goal is to achieve intertidal marsh elevation for the 20-year project life.

2. Construct seven plugs and replace one existing fixed-crest weir. Existing oil field access canals will be closed with one earthen plug, three sheetpile plugs, and two rock plugs. A small breach in the Small Bayou La Pointe ridge will be repaired with an earthen plug. Rather than repair the existing washed-under weir, the weir will be replaced with a new sheetpile weir and the old structure will be removed.
3. Material dredged for construction access through Raccourci Bay will be used beneficially to build up the eroding shoreline of that bay north of the project area.

Design Modifications Made During Phase I

The following modifications to project features were made during Phase I Engineering and Design. None of these changes were determined to be substantial modifications to the original conceptual design:

- 1) Armoring along the shoreline of Lake Pagie was eliminated because the earthen containment dikes used for marsh creation will achieve the goal of protecting that marsh, and the potential harm to the submerged aquatic vegetation in Lake Pagie expected to result from digging access for a rock barge.
- 2) After inspection of the existing weir, it was determined that it would be more cost-effective to remove and replace the weir rather than to repair it.

A. List of Project Goals and Strategies.

The goal of the proposed project is to protect and restore marshes along the north shore of Lake Mechant and the Small Bayou La Pointe Ridge. Those marshes form a critical land bridge barrier between the easily erodible fresh marshes to the north and the brackish waters and marine processes of Lake Mechant to the south. The strategies used to address the needs in this area include dedicated dredging to create 526 acres of marsh in key areas of loss, and construction of several plugs in channels through the Small Bayou La Pointe ridge to restore the hydrologic function of this landbridge.

B. A Statement that the Cost Sharing Agreement between the Lead Agency and the Local Sponsor has been executed for Phase I.

A Phase I Cost Share Agreement between the U.S. Fish and Wildlife Service and Louisiana Department of Natural Resources was executed on May 16, 2001.

C. Notification from the State or the Corps that landrights will be finalized in a short period of time after Phase 2 approval.

FWS has received verbal notification from DNR that landrights will be finalized in a relatively short time after Phase 2 approval.

D. A favorable Preliminary Design Review (30% Design Level). The Preliminary Design shall include completion of surveys, borings, geotechnical investigations, data analysis review, hydrologic data collection and analysis, modeling (if necessary), and development of preliminary designs.

A 30% design meeting was held on May 7, 2003, and resulted in favorable reviews of the project design with minor modifications. DNR and FWS agreed on the project design and to proceed with project implementation.

E. Final Project Design Review (95% Design Level). Upon completion of a favorable review of the preliminary design, the Project plans and specifications shall be developed and formalized to incorporate elements from the Preliminary Design and the Preliminary Design Review. Final Project Design Review (95%) must be successfully completed prior to seeking Technical Committee approval.

A 95% design meeting was held on August 12, 2004, and resulted in favorable reviews of the project design with minor modifications. Construction cost estimates were adjusted according to the final design. DNR and FWS agreed on the project design and to proceed with project implementation.

F. A draft of the Environmental Assessment of the Project, as required under the National Environmental Policy Act must be submitted thirty days before the request for Phase 2 approval.

A draft EA will be submitted for public comment at least 30 days prior to the October 13, 2004 Task Force meeting.

G. A written summary of the findings of the Ecological Review (See Appendix B).

The following paragraph is from the Recommendations section of the July 2004 draft Ecological Review:

Based on the investigation of similar restoration projects and a review of engineering principles, the proposed strategies of the North Lake Mechant Land Bridge Restoration CU2 project will likely achieve the desired ecological goals.

H. Application for and/or issuance of the public notices for permits. If a permit has not been received by the agency, a notice from the Corps of when the permit may be issued.

The FWS has received a Section 404 permit from the Corps of Engineers, a state Coastal Zone Consistency determination from DNR, and Water Quality Certification from LDEQ. The Section 404 permit (CY-20-040-0014) was received on December 18, 2003. Minor modifications in the final project design will require a modification to that permit prior to construction.

I. A hazardous, toxic and radiological waste (HTRW) assessment, if required, has been prepared.

An HTRW assessment/contaminants screening was conducted by the FWS Lafayette Field Office=s Environmental Contaminants Specialist. It was concluded that project implementation would not encounter any of the known wells or associated oil and gas facilities in the vicinity of the project area and that re-suspension of contaminants from sediment disturbance is not expected. Based on available information, further study is not warranted.

J. Section 303(e) approval from the Corps.

Section 303(e) approval was granted by the Corps via letter dated June 25, 2003.

K. Overgrazing determination from the NRCS (if necessary).

An overgrazing determination was issued on June 11, 2002 by the NRCS and indicated that overgrazing would not be a problem in the project area.

L. Revised cost estimate of Phase 2 activities, based on the revised Project design.

Funding/Budget information:

1) Specific Phase Two funding request (updated construction cost estimate, three years of monitoring and O&M, etc.)

2) Fully funded, 20-year cost projection with anticipated schedule of expenditures

The specific Phase 2 funding request (updated construction estimate and three years of monitoring and O&M) is \$32,340,040. The revised total fully-funded cost of the project is \$36,164,616.

M. Estimate of project expenditures by state fiscal year subdivided by funding category.

Estimate of Project Expenditures by State Fiscal Year
July 2004 to June 30, 2005

| Budget Category | Amount |
|---|---------------------|
| Accrued costs to June 30, 2004 | \$613,468.43 |
| | |
| Budget from July 2004 to June 2005 | |
| Salary | 14,000 |
| Travel | 500 |
| Equipment Usage | 500 |
| Engineering & Design | 25,000 |
| Landrights | 5,000 |
| GIS | 5,000 |
| | |
| Total Projected to June 2005 | \$50,000 |
| Total Including Prior Costs | \$663,468.43 |

N. A revised Wetland Value Assessment must be prepared if, during the review of the preliminary NEPA documentation, three of the Task Force agencies determine that a significant change in project scope occurred.

Because the project features did not change significantly in extent or scope, no revised WVA was performed. The Wetland Value Assessment conducted for the Phase I project estimated a benefited area of 8,877 acres and the net creation/restoration of 553 acres of marsh attributed to CU-2 features at the end of the project life.

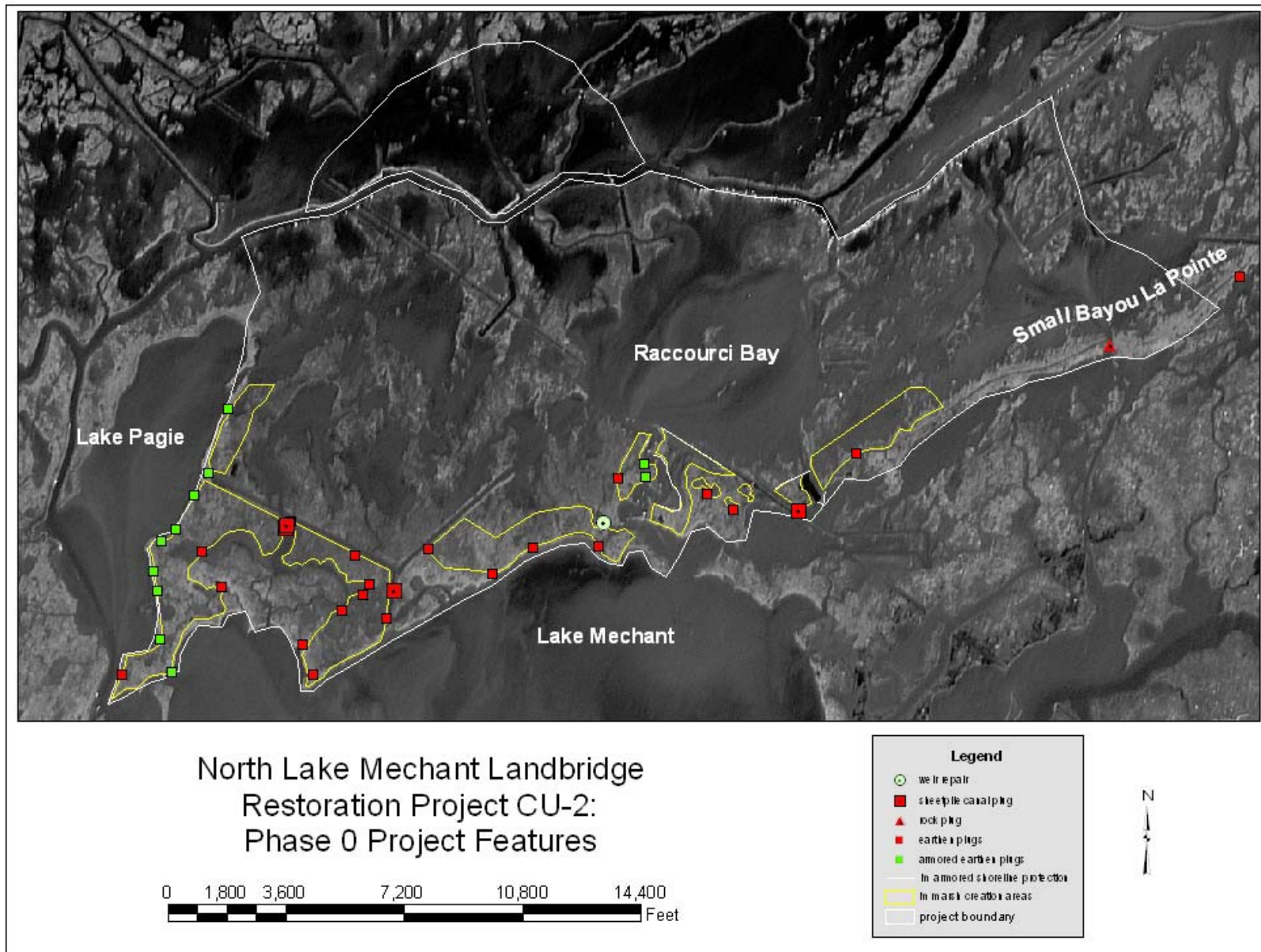
O. A breakdown of the Prioritization Criteria ranking score, finalized and agreed-upon by all agencies during the 95% design review.

The following Prioritization Criteria scores were reviewed and agreed upon by all agencies prior to the 95% design meeting.

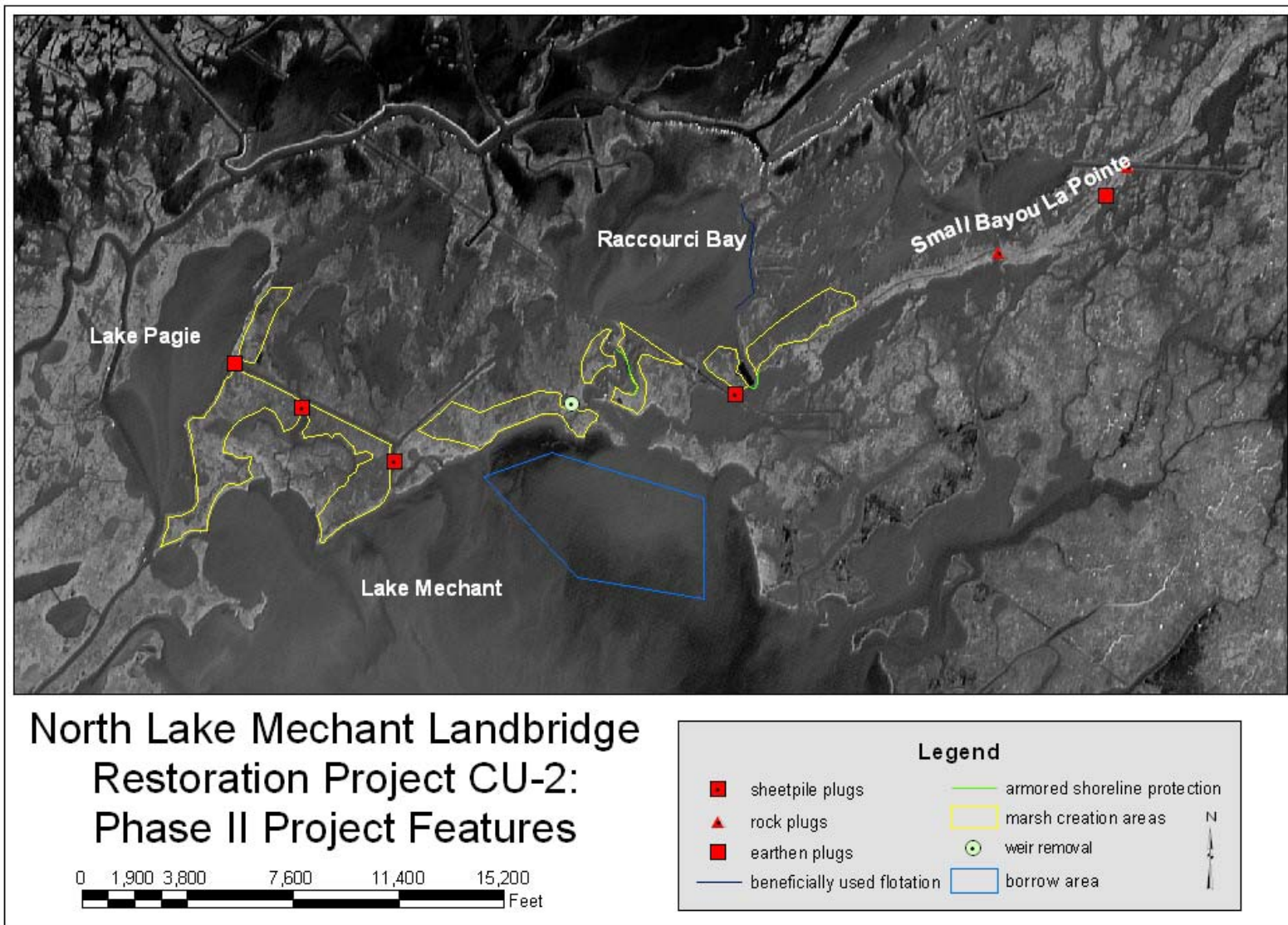
| Criteria | Score | Weight | Final Score |
|----------------------------|--------------|---------------|--------------------|
| Cost Effectiveness | 2.5 | 2 | 5 |
| Area of Need | 7.4 | 1.5 | 11.1 |
| Implementability | 10 | 1.5 | 15 |
| Certainty of Benefits | 6 | 1 | 6 |
| Sustainability of Benefits | 6 | 1 | 6 |
| HGM – Riverine Input | 0 | 1 | 0 |
| HGM – Sediment Input | 0 | 1 | 0 |
| HGM – Landscape Features | 10 | 1 | 10 |
| Total Score | | | 53.1 |

P. Agencies should submit a spreadsheet with the categorical breakdown for Phase 2, as outlined below:

Attachment 1



Attachment 2



Attachment 3

**Reduction in Funding Request for the North Lake Mechant Landbridge Restoration
Project CU2 (TE-44) (as requested by the CWPPRA Technical Committee at their
September 9, 2004 meeting)**

Summary:

We are able to reduce the Phase 2, increment 1 funding request by **\$4,939,081** to **\$27,400,959** without compromising the integrity of the project. This was done through a combination of reducing Phase 2 administrative costs and 2 construction-related reductions. In addition, we have de-obligated funds from other FWS projects, including Phase 1 and CU1 funds from this project, increasing the amount of funds available for funding construction of all projects. The combination of reducing the project costs and deobligating over \$1 million, results in a positive balance in the program, based on the funding projections provided at the Technical Committee meeting. The deobligation of funds is on-going, and is expected to increase the positive balance in the program, or “cushion”, before the October 13 Task Force meeting.

How the project budget was reduced:

- 1) Non-construction Phase 2 estimates that were reduced:
 - a) Federal S&A reduced to \$100,221 (savings of **\$353,413**).
 - b) Phase 2 Landrights budget reduced to \$150,089, which is still twice the appraised value of oyster leases in the project area (savings of **\$296,156**).

Total savings in non-construction Phase 2 estimate: **\$649,569**

- 2) Construction-related changes were made to reduce the construction estimate. These changes will be included in the bid package as additive alternates so that they can be put back in if the bids come in low. There were no changes made in the contingency assumptions or unit pricing for any feature. All changes were reviewed by the Engineering Work Group. Dredge quantities were adjusted based on the following changes (see attached project map for locations of project features):
 - a) Eliminate one marsh creation fill area on Lake Pagie north of the Y-canal. This 40 acre area is north of the main landbridge and is considered the least vital marsh creation cell to maintaining the integrity of the landbridge (savings of **\$1,982,133**).
 - b) Fill height was reexamined individually for each marsh creation cell. Where geotech analysis warranted, fill height was reduced from +3 to +2.5 feet. This idea was discussed at the 95% design meeting (savings of **\$2,083,900**).

Total savings in construction estimate (not fully funded): **\$4,066,033**

Total savings in Phase 2 estimate (not fully funded): **\$4,715,602**

Revised fully funded cost estimate (as determined by the CWPPRA Economics Work Group,

and based on deobligating funds from CU1 and Phase 1 budgets):

The revised fully funded cost estimate is **\$30,977,916** (previously, \$36,164,116)

Revised Phase 2, increment 1 request:

The revised Phase 2, increment 1 request is **\$27,400,959** (previously \$32,340,040)

Impacts to project benefits and prioritization:

Concerns have been raised regarding changing projects “on the fly”, resulting in the need to re-evaluate prioritization and/or WVA. Using the CWPPRA SOP guidance, the proposed changes do not result in a greater than 25% change in the project, thus no new WVA is warranted. In the WVA, 80% of the benefits came from the marsh creation acres. The 40 acre marsh creation cell to be eliminated is only 7.6% of the marsh to be created and does not impact the integrity of the landbridge.

Impacts on Prioritization Score:

The prioritization score remains unchanged. Reducing the net acres based, on the reduction of 40 acres, while reducing the fully funded cost, results in no change in any of the prioritization criteria. Therefore, the total prioritization score remains 53.1.

Other FWS funds, not specific to this project, deobligated and returned to the program:

The FWS has reviewed several projects and deobligated over \$1 million, to date. That, combined with the project-specific reductions presented here, has produced a positive balance in the CWPPRA program so that there is enough money to build this project. Budget reviews are on-going, and the available cushion in the program is expected to increase before the October 13 Task Force meeting.

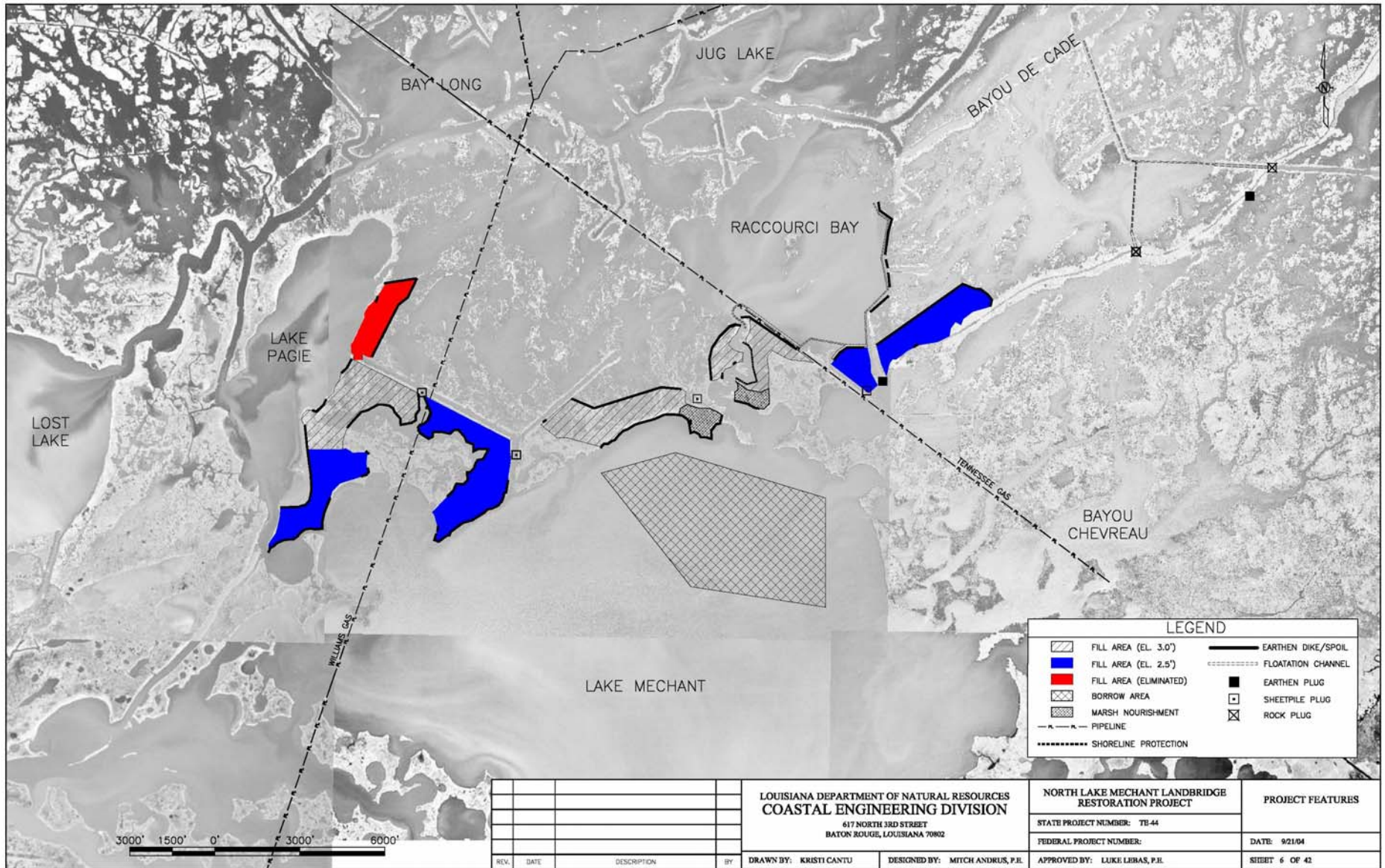
Additional sources of money in the program that could contribute to either funding construction of projects, or maintenance of a “cushion”:

Updated estimate for PPL 14 Phase I costs will be available before the Task Force meeting.

The \$9 million reserved for PPL 14 Phase 1 could be reduced, based on those new estimates. Any money not encumbered for PPL 14 would be available to the program as a “cushion”.

Any Phase 1 funds no longer needed for projects approved for construction could be returned to the program.

Map of Proposed Changes to Project Features





North Lake Mechant Landbridge Restoration (TE-44)

Project Status

Approved Date: 2001

Project Area: 6,860 acres

Approved Funds: \$2.9 M

Total Est. Cost: \$26 M

Net Benefit After 20 Years: 604 acres

Status: Engineering and Design

Project Type: Dredged Material/Marsh Creation and Vegetative Planting

Location

The project is located in the Terrebonne Basin, in Terrebonne Parish, Louisiana.

Problems

The project would protect and restore a critical landbridge barrier between the easily erodible fresh marshes north of Bayou De Cade and the higher saline environment of Lake Mechant. At the present shoreline erosion rate, the north Lake Mechant shore will soon fail to act as a barrier, allowing the hydrologic connection between Lake Mechant and the fresher marshes to the north.

In addition, erosion and deterioration along the banks of Raccourci Bayou are threatening to enlarge and straighten this winding tidal pass into a major conduit for water exchange. These changes will accelerate the loss of the remaining interior marshes, extend lake-like conditions, and increase salinities north to Bayou De Cade.

Should shoreline breaching and enlargement of tidal channels allow high tidal energy conditions to intrude into the project area, the organic interior marshes would likely experience increased loss rates.



Northern shoreline of Lake Mechant showing the saltmeadow cordgrass (*Spartina patens*) dominated marsh eroding behind a large stand of smooth cordgrass (*Spartina alterniflora*) left standing at the water's edge.

Restoration Strategy

Dredged material from northern Lake Mechant will be used to create marsh. Smooth cordgrass (*Spartina alterniflora*) will also be planted along the shorelines of Lake Mechant, Goose Bay, and Lake Pagie. The project will also repair breeches formed by erosion and oilfield access canals which threaten the integrity of the landbridge.

Progress to Date

The Louisiana Department of Natural Resources will conduct project engineering and design work in-house. In February 2001, the Louisiana Department of Wildlife and Fisheries established a public oyster seedground in Lake Mechant. That seedground and several private oyster leases may impact proposed project construction activities. Work is underway to address oyster lease impact issues. The shoreline vegetation plantings were installed in summer 2003. Construction approval is expected to be sought in April 2004. This project is on Priority Project List 10.



Aerial photo of the shoreline of Lake Mechant showing the narrow lake rim and deteriorating marsh to the north. Dredged material will be pumped into this broken marsh to create new marsh to maintain this land bridge.

For more project information, please contact:



Federal Sponsor:

U.S. Fish and Wildlife Service
Lafayette, LA
(337) 291-3100



Local Sponsor:

Louisiana Department of Natural Resources
Baton Rouge, LA
(225) 342-7308

North Lake Mechant Landbridge Restoration (TE-44)

Plug*

Weir (existing repair)

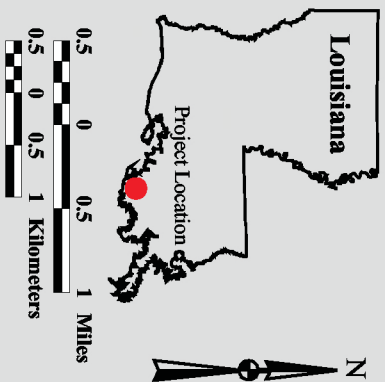
Armored Banks/Levees*

Vegetative Plantings*

Marsh Creation Area*

Project Boundary

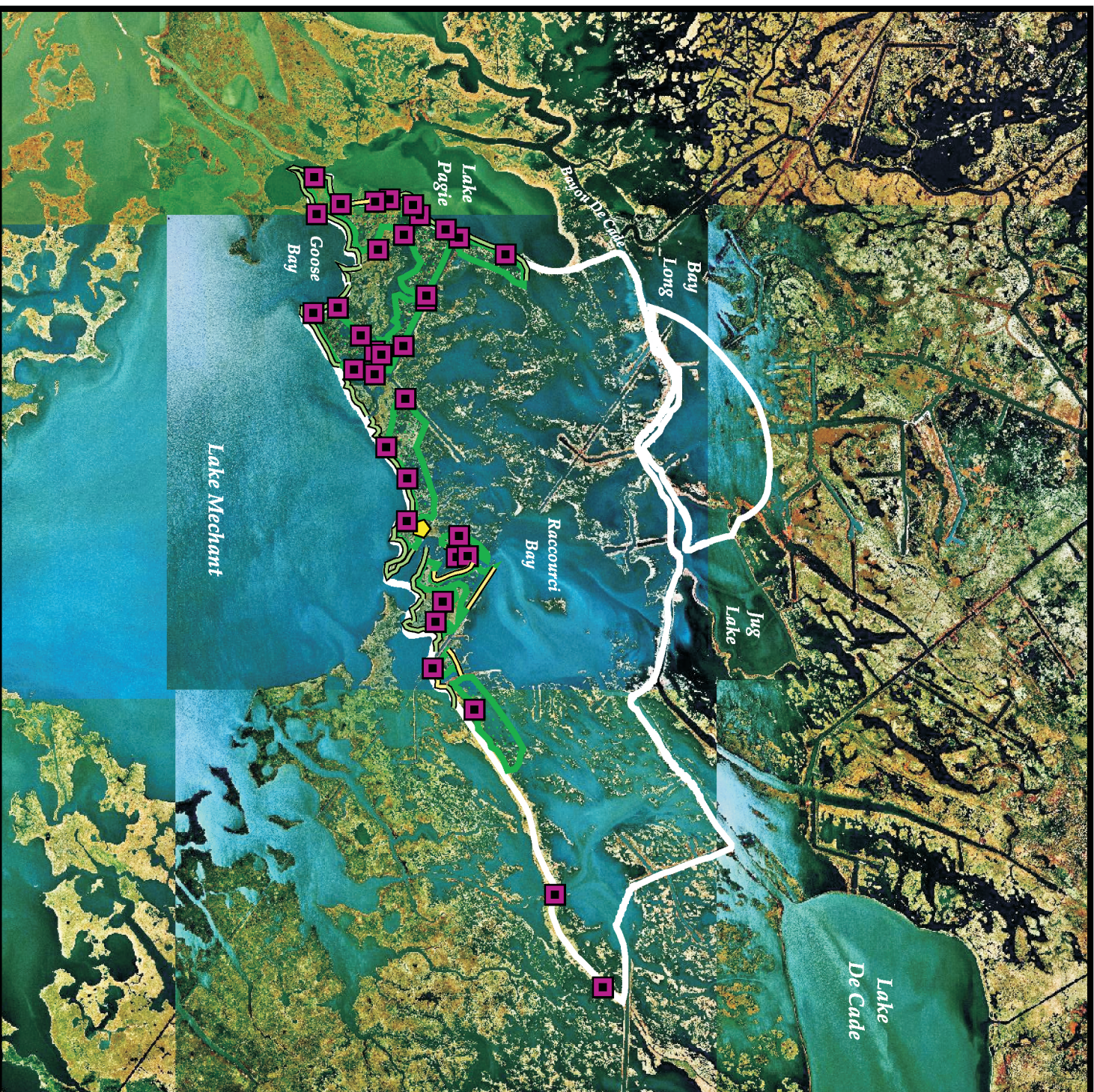
* denotes proposed feature



Map Produced By:
 U.S. Department of the Interior
 U.S. Geological Survey
 National Wetlands Research Center
 Coastal Restoration Field Station

Background Imagery:
 1998 Digital Orthophoto Quarter Quadrangle

Map Date: August 12, 2003
 Map ID: USGS-NWRC 2003-11-045
 Data accurate as of: March 11, 2003



NORTH LAKE MECHANT LANDBRIDGE RESTORATION PROJECT TE-44



Project Background

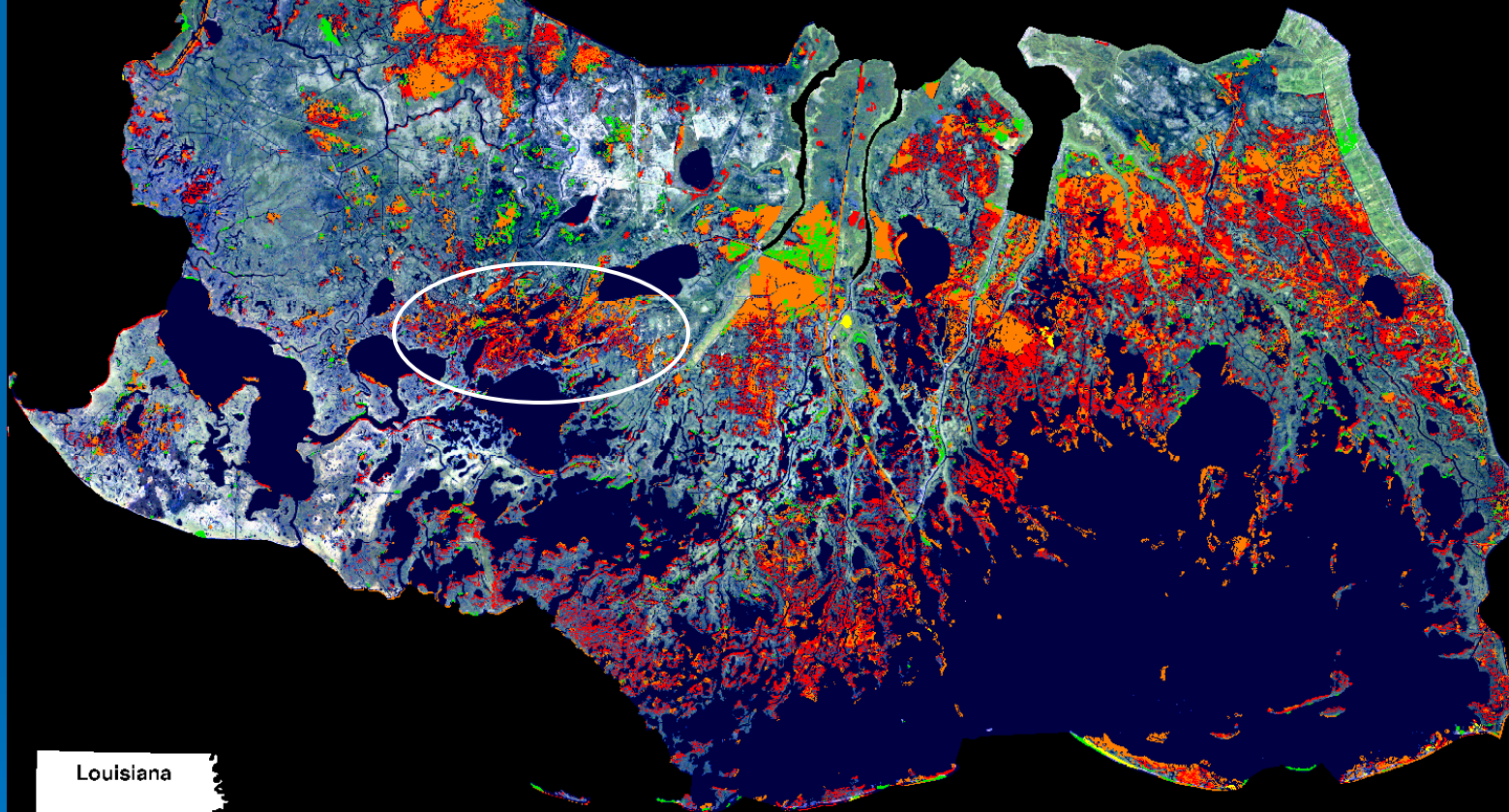
- Approved for Phase 1 funding by the CWPPRA Task Force on the 10th Priority Project List in January, 2001.
- CU-1 (Shoreline Vegetative Plantings) completed in June 2003.
- Phase 2 funding currently being requested for CU-2.
- Ranked 5th by vote of the Technical Committee at their September 9, 2004 meeting.
- Phase 2 funding request has been modified, at the request of the CWPPRA Technical Committee, to fit into the available project construction funding.

Problems in the Project Area

- The north shore of Lake Mechant and the Small Bayou La Pointe natural levee form a critical landbridge barrier between the easily eroded fresh marshes surrounding Bayou Decade and the marine processes of Lake Mechant.
- Marsh loss rates are high and the area was heavily impacted by Hurricane Andrew in 1992 and again by Hurricane Lili in 2002.
- The goal of the project is to protect and restore marshes along the north shore of Lake Mechant and the Small Bayou La Pointe ridge. The strategies used include dedicated dredging to create marsh in key areas of loss, and construction of several plugs in channels that threaten the integrity of the landbridge.

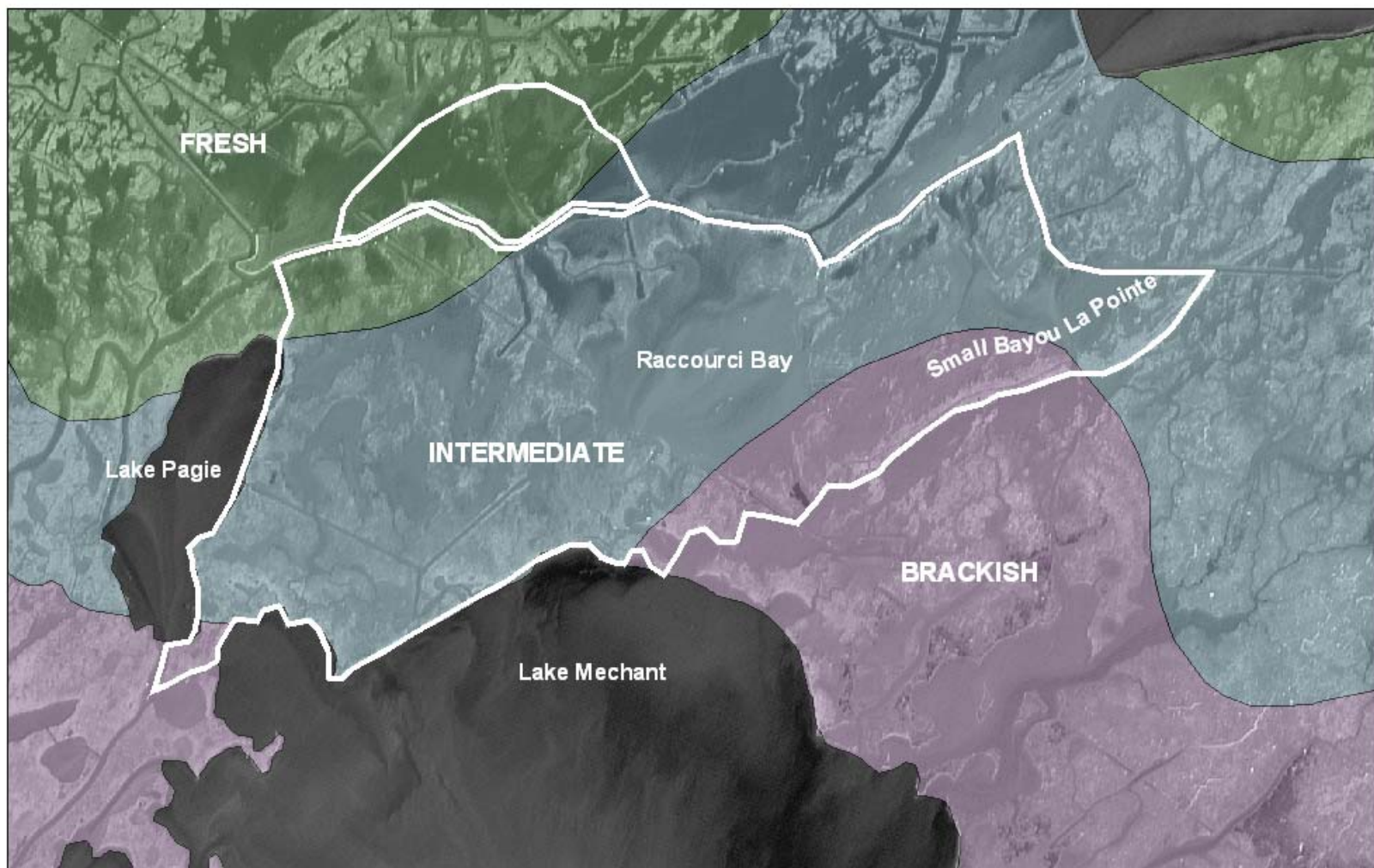
Terrebonne Basin Trends

1956 - 78 Loss = 9.3 Sq Mi/Yr
1978 - 90 Loss = 10.2 Sq Mi/Yr

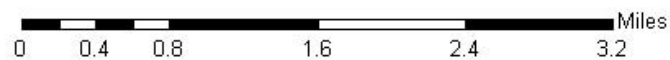


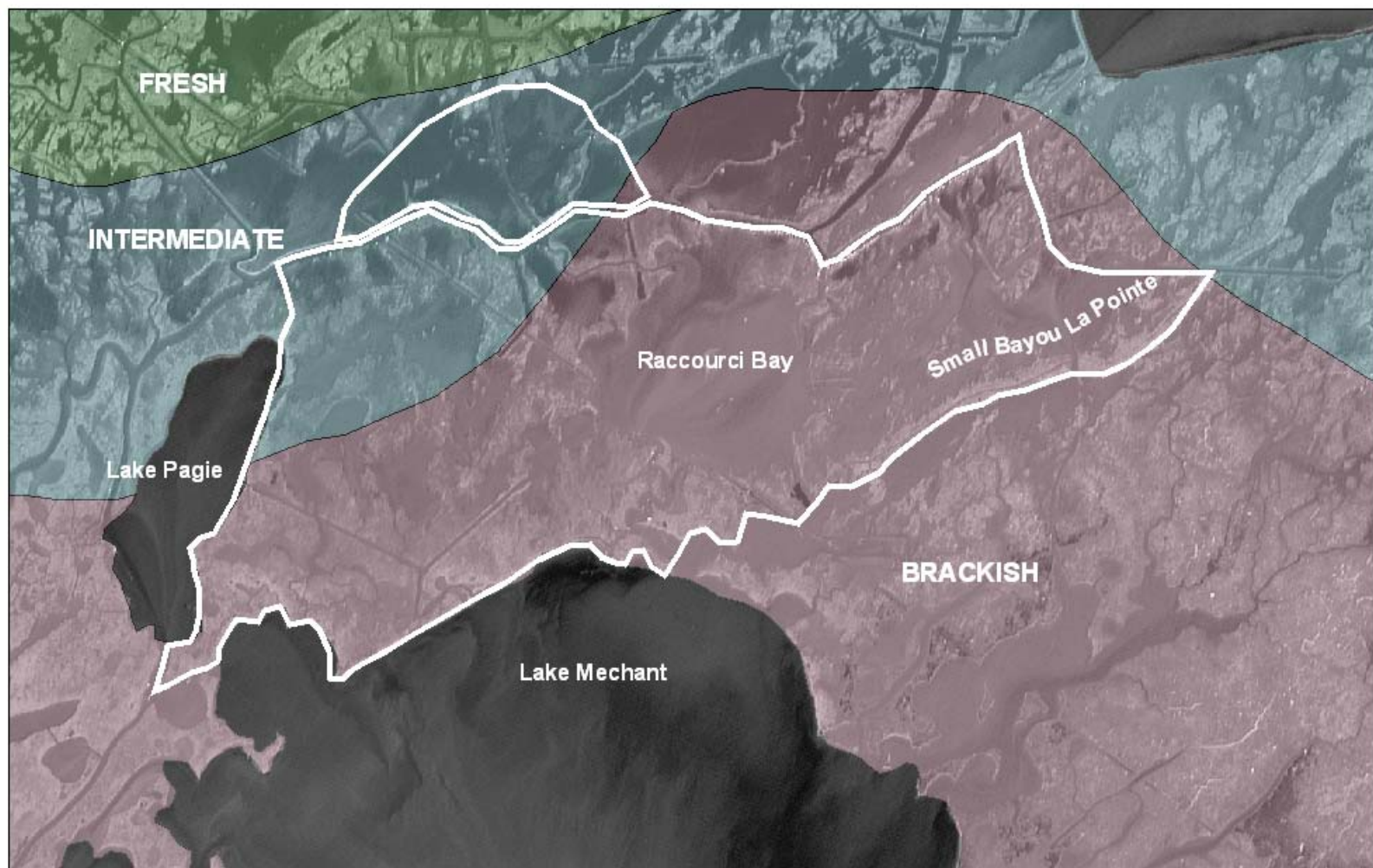
NWRC Open File Report 94-01

- Legend**
- 1956 - 78 Loss
 - 1956 - 78 Gain
 - 1978 - 90 Loss
 - 1978 - 90 Gain

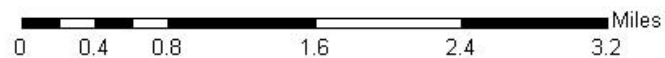


1997 Vegetation Types





2001 Vegetation Types





July 2000

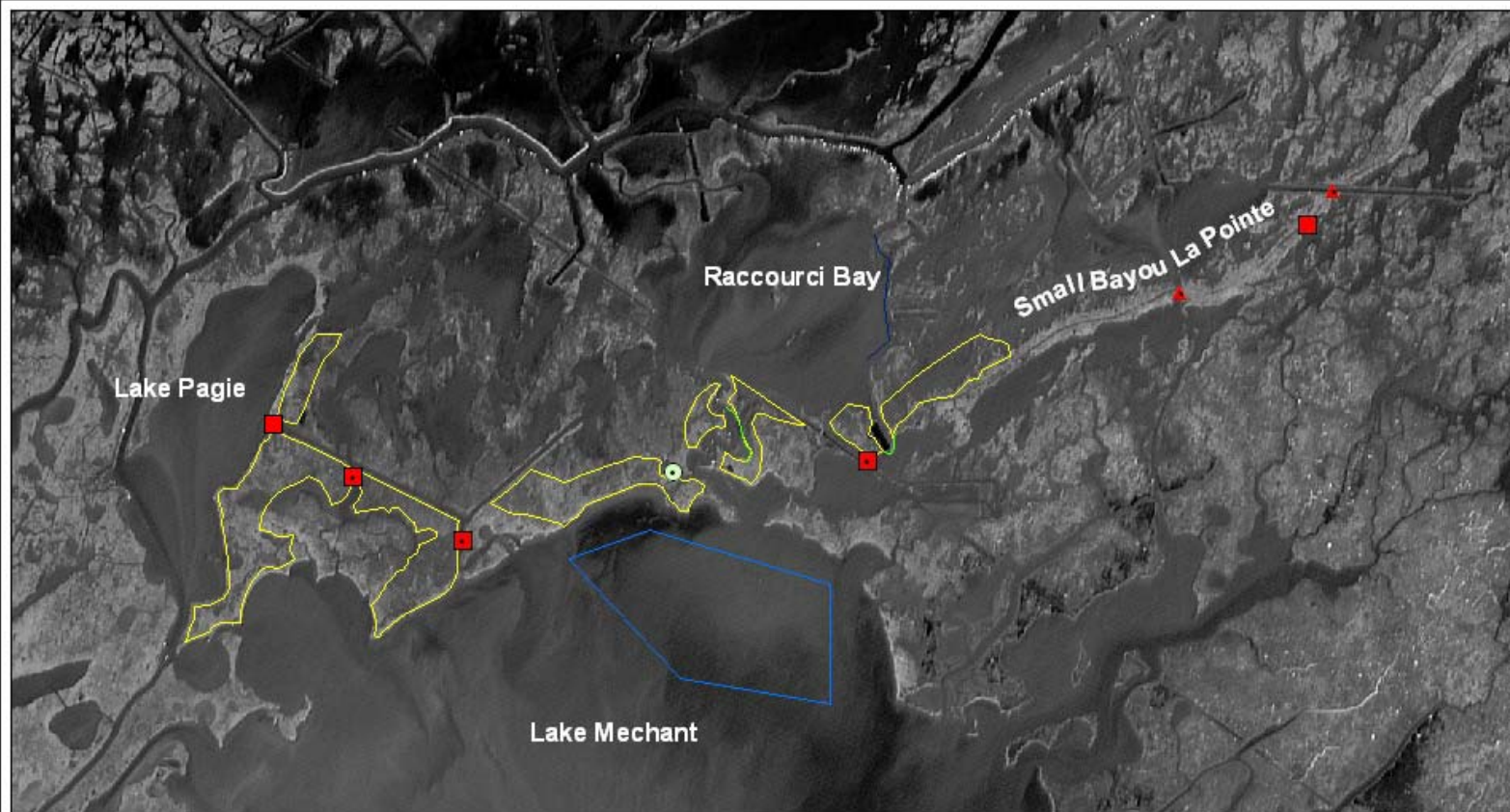


18 11:00 AM
November 2002



18 10:59 AM

November 2002



North Lake Mechant Landbridge Restoration Project CU-2: Phase II Project Features

0 1,950 3,900 7,800 11,700 15,600
Feet

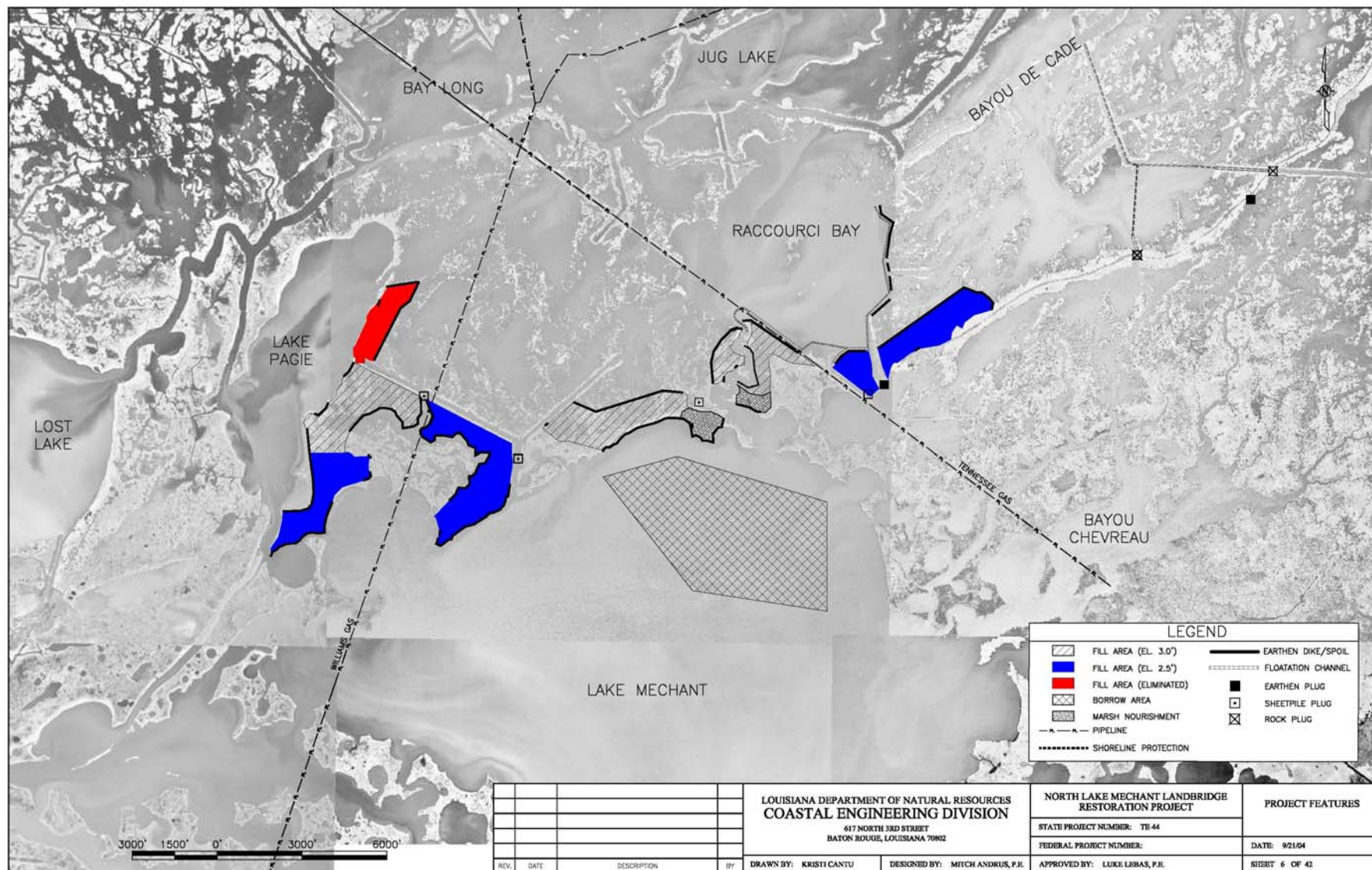
Legend

- sheetpile plugs
- ▲ rock plugs
- earthen plugs
- beneficially used flotation
- armored shoreline protection
- marsh creation areas
- weir removal
- borrow area

How the Project Budget was Reduced (cont'd)

Construction-related Changes

- Fill height and geotech analysis were re-examined for each marsh creation cell. Where warranted, fill height was reduced by 6 inches. This was discussed at the 95% design meeting (**\$1.9 million savings**).
- One 40 acre marsh creation cell was moved to “additive alternate” in the bid package (**\$2 million savings**).



How FWS Returned Funds to the Program

- FWS reviewed several CWPPRA projects and de-obligated Federal S&A funds, reconciled Phase 1 costs for projects that have requested Phase 2 authorization, and closed out 1 demonstration project.
- These funds are available to the program as a whole, and not earmarked for the North Lake Mechant project.
- The result is that more funds are available for construction of projects and that the North Lake Mechant project can be constructed while maintaining a positive balance in the program.

Checklist of Phase 2 Requirements

- Cost Share Agreement: May 16, 2001.
- Landrights: Will be finalized shortly after Phase 2 approval.
- 30% Design Review: May 7, 2003.
- 95% Design Review: August 12, 2004.
- Draft EA: Aug. 30, 2004.
- Permits: Section 404, DEQ WQ; State Consistency – December, 2003.
- Section 303(e): June 25, 2003
- Overgrazing: June 11, 2002

Why Do We Need to Fund This Project Now?

- Restores a critical landbridge which will continue to deteriorate at a high rate of loss without the project.
- Will be much more difficult and expensive to restore the landbridge when the shoreline of Lake Mechant is breached and loss rates increase.
- Strong public support (letters included in TF binders).
- Works in conjunction with other authorized CWPPRA projects (South Lake Decade; Brady Canal; Penchant Basin) to restore a rapidly eroding part of the Terrebonne Basin.
- Number 1 ranked project by 3 voting agencies on the CWPPRA Technical Committee.
- Can be funded within the available budget while leaving a “cushion” in the CWPPRA program.

Phase II Authorization Request

Dedicated Dredging on the Barataria Basin Landbridge

BA-36

Description of Phase I Project

The Dedicated Dredging on the Barataria Basin Landbridge Project was approved for Phase I funding by the CWPPRA Task Force on the 11th Priority Project List. At the time of Phase I authorization, project features included:

- 1) Hydraulic dredging in Bayous Perot and Rigolettes to create 780 acres of marsh and nourish 502 acres of existing marsh. The target elevation for the fill material was 2.3 ft NGVD;
- 2) Shoreline protection features associated with the Barataria Basin Landbridge Shoreline Protection Project (BA-27) would be used for containment along the Bayous Perot and Rigolettes shorelines;
- 3) Earthen containment would be used around the remainder of the project perimeter where fragmented marsh does not allow adequate containment. Depending on soil stability, containment dikes would be breached upon demobilization;
- 4) Upon demobilization, the marsh platform would be aerially seeded with a mixture of browntop millet, Japanese millet and/or other species to increase vegetative colonization;
- 5) Tidal channels would be dredged after construction to allow tidal exchange to interior ponds.

Specific goals of the project were to: 1) create 780 acres of emergent marsh through the deposition of dredged material into open water areas and 2) nourish/enhance 502 acres of emergent marsh by adding a layer of sediment to the marsh surface.

The Wetland Value Assessment conducted for the Phase I project estimated a benefited area of 1,282 acres and the net creation/restoration of 564 acres of marsh at the end of the project life.

At the time of Phase I approval, the fully-funded project cost was \$29,692,777. That figure included \$2,294,410 for Phase I and \$27,398,367 for Phase II. The cost breakdown for Phases I and II is presented in the following table.

Engineering and Design Tasks

In order to facilitate the design of the borrow and fill areas, a hydrographic and topographic survey was performed in April and May, 2003 by SJB Group, Inc. and Coastal Engineering Consultants. A magnetometer survey was performed in April and May, 2003 by SJB Group, Inc. and Alpine Ocean Seismic Survey in order to locate existing pipelines and obstructions.

A total of 19 subsurface borings were drilled within the project area by Soil Testing Engineers, Inc. in April 2003. Existing data was also utilized from 14 subsurface borings by Dames and Moore, Inc. in 1999 and six subsurface borings by Soil Testing Engineers, Inc. in 2000. The soil samples were tested in the laboratory for classification, strength, and compressibility. Settlement consolidation, cut to fill ratios, and dewatering time were estimated for the proposed dikes and hydraulic fill. A cost-benefit analysis was performed on final fill elevations of 1.5, 2.0, 2.5, 3.0, and 3.5 ft using the geotechnical analysis. Slope stability analyses were also performed for the proposed containment dikes.

Design meetings were held at the 30% (December 17, 2003) and 95% (July 29, 2004) levels.

Landrights, Cultural Resources, Environmental Compliance and Other Tasks

Preliminary landrights has proceeded smoothly and no problems are anticipated in acquiring final landrights.

Two cultural resource sites are located within the project area. However, neither site is eligible for the National Register of Historic Places. The Louisiana Department of Culture, Recreation and Tourism and the Chitimacha Tribe of Louisiana have indicated no objections to project implementation.

The Corps of Engineers Section 404 permit application was placed on Public Notice on July 23, 2004. The Louisiana Department of Natural Resources-Coastal Management Division has been contacted for a consistency determination in regards to the Louisiana Coastal Resources Program and a request for water quality certification has been provided to the Louisiana Department of Environmental Quality.

An overgrazing determination provided by the Natural Resources Conservation Service indicated that overgrazing is not a problem in the project area. An HTRW assessment conducted by the Lafayette Field Office of the U.S. Fish and Wildlife Service indicated that no HTRW materials should be encountered during project implementation.

A draft Ecological Review is available and a draft Environmental Assessment will be released for public comment at least 30 days before the October 13, 2004 Task Force meeting.

Description of the Phase II Candidate Project

Project Features

Three areas within Bayou Perot and Rigolettes, designated as Borrow Sites 1, 2, and 3 (Attachment 1), were investigated as potential sources of earthen material to create marsh in Fill Sites 1 and 2, as shown in Figure 1. The volume required for marsh creation areas and the cut to fill ratio regulated the size and shape of the borrow sites. The delineation of the 3 borrow sites was expanded to the greatest extent possible given the geographical (existing marsh) and structural constraints (pipelines) in order to reduce the effective depth of cut. Minimizing the depth of cut also minimizes the change in hydraulic gradient caused by dredging. As a result of calculations, a maximum depth of cut from an average mud level elevation of -6.0' NAVD to elevation -10.0 ft NAVD 88 will achieve the required volume given the delineation of the 3 borrow areas and cut to fill ratio. The typical cross section detail is shown in Figure 2.

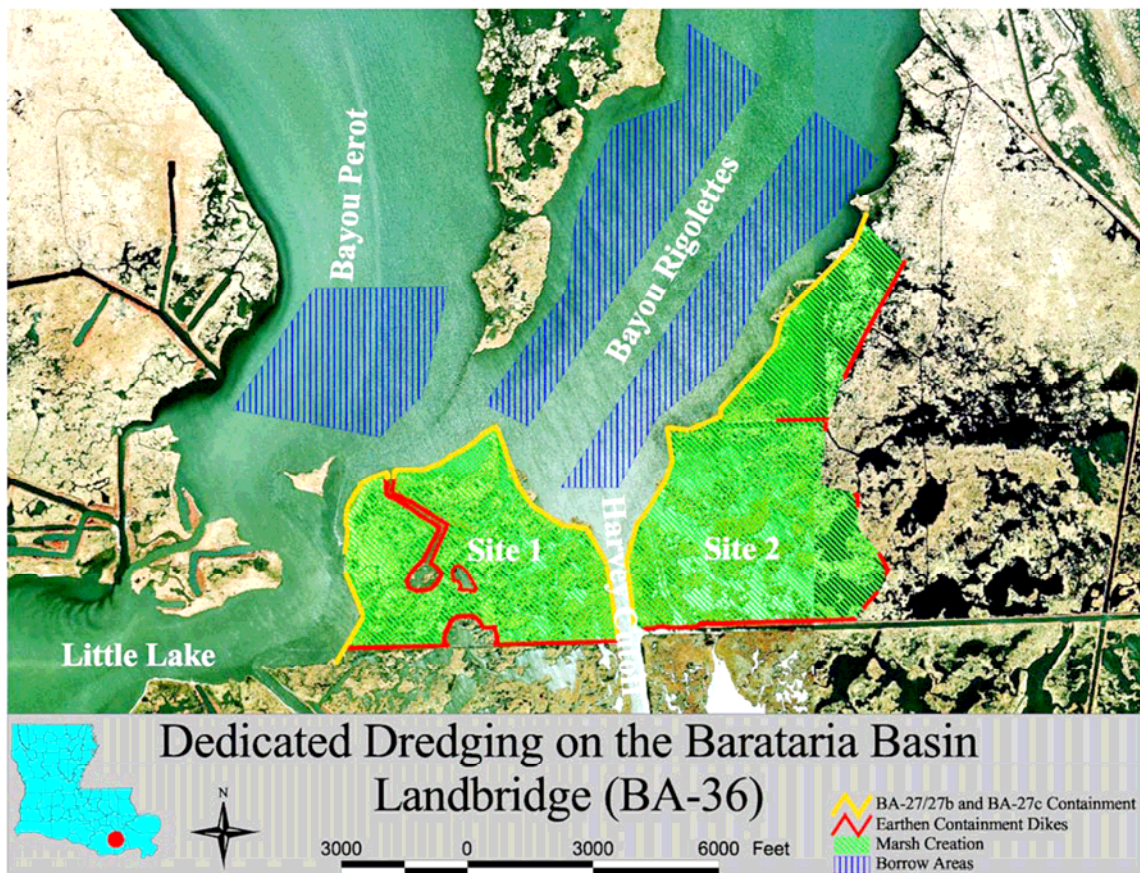


Figure 1 – Locations of Borrow and Fill Sites

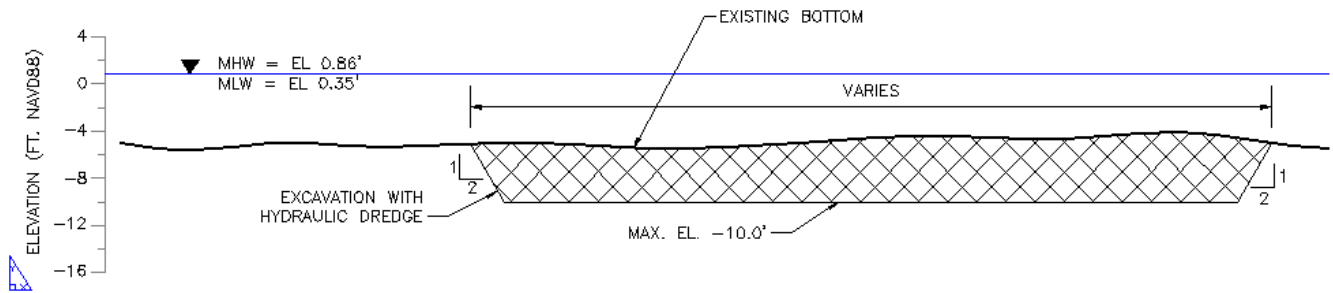


Figure 2 – Typical Cross Section of Borrow Areas

Fill Areas 1 and 2 (Figure 1) are comprised of mostly broken marsh and open water covering approximately 504 acres and 741 acres, respectively. A cost-benefit analysis was performed on final fill elevations of +1.5, +2.0, +2.5, +3.0, and +3.5 ft using information from the geotechnical investigation. Given a project design life of 20 years and an existing average marsh elevation of +1.0 ft NAVD 88, a target elevation of +2.5 ft NAVD 88 was selected (Figure 3). Two construction lifts are proposed to enhance consolidation through improved dewatering and placement. The initial lift will be placed above mean high water at elevation +1.0 ft NAVD88 and must remain dewatered for a minimum of 30 days before more fill is added. The final lift will be placed to achieve the target elevation of +2.5 ft NAVD 88.

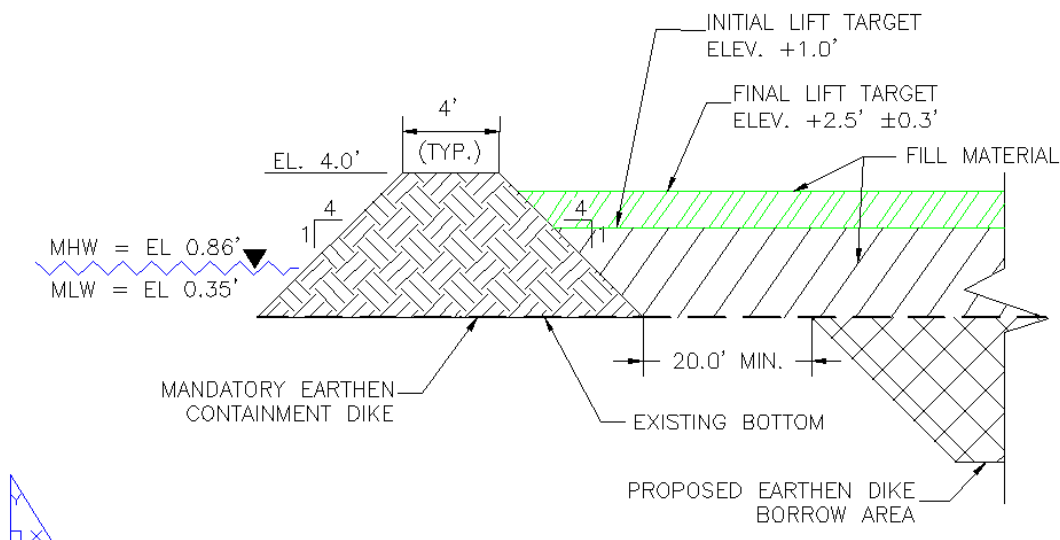


Figure 3 – Typical Cross Section of Mandatory Earthen Containment Dikes

In order to properly contain and dewater fill material, mandatory containment dikes are included in the design. Given a target fill elevation of +2.5 ft NAVD 88, the crown height of the containment dikes is set at +4.0 ft NAVD 88 with side slopes of 4:1 (Figure 3). The containment dikes will tie into the NRCS rock dikes and concrete panels by overlapping the existing structures.

Internal earthen training dikes will be used in conjunction with the other containment structures to create containment cells in order to properly maintain and dewater the fill material. They will also be utilized at all gaps and fish dips in the NRCS concrete panels. The training dikes will have 4:1 side slopes with a 2 ft wide crown set at the same target elevation as the fill (+2.5 ft NAVD88) to ensure proper containment height and eliminate the need for future degrading (Figure 4). The location and alignment of the training dikes will be determined in the field by the construction contractor and pre-approved by the construction inspector.

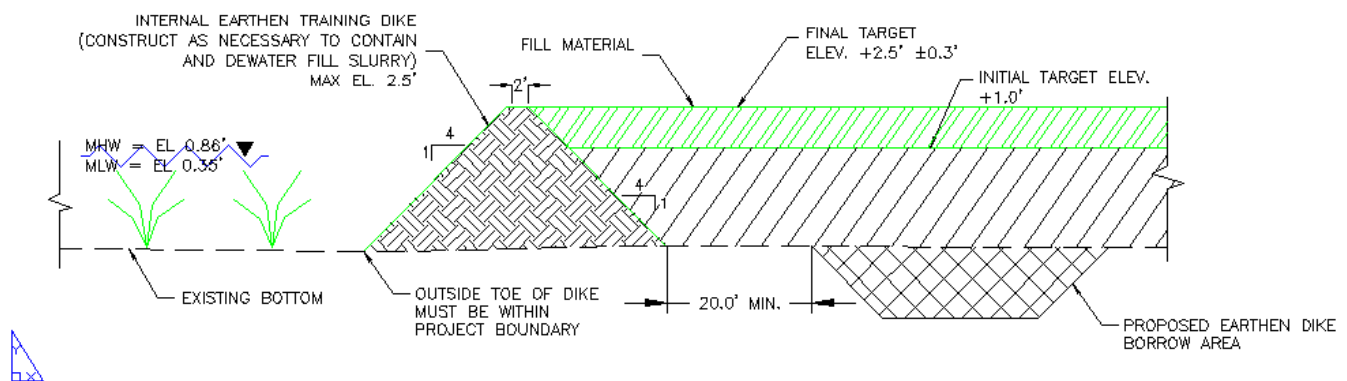


Figure 4 – Typical Cross Section of Internal Earthen Training Dikes

Three existing ponds and one canal within Fill Area 1 will remain in their existing condition as requested by the landowner (Figure 1). Mandatory earthen containment dikes will be constructed around the perimeters of the ponds and canal.

Updated Assessment of Benefits

A revised Wetland Value Assessment was prepared and reviewed by the Environmental Work Group. The total project area was decreased from 1,282 acres to 1,245 acres. Total Net Acres protected/created/restored by the project increased from 564 acres (Phase 1 project) to 605 acres (Phase 2 project). Net Average Annual Habitat Units decreased from 339 to 337.

Modifications to the Phase 1 Project

Final design features are essentially unchanged from the original Phase 1 project. The following changes are noteworthy; 1) additional containment dikes have been added at the landowner's request to retain three ponds in Fill Site 1, 2) additional containment dikes have been added at the landowner's request in Fill Site 2 along the southern boundary to prevent the filling of a small trenasse used for boat access to hunting sites, 3) marsh nourishment has been omitted as a project feature and fill heights (+2.5 NAVD 88) are the same throughout

Checklist of Phase Two Requirements Dedicated Dredging on the Barataria Basin Landbridge BA-36

A. List of Project Goals and Strategies.

The goals of the project are to: 1) create 1,217 acres of emergent marsh through the deposition of dredged material into open water and fragmented marsh and 2) maintain 995 acres of emergent marsh at the end of the 20-year project life.

B. A Statement that the Cost Sharing Agreement between the Lead Agency and the Local Sponsor has been executed for Phase I.

A Cost Share Agreement between the U.S. Fish and Wildlife Service and Louisiana Department of Natural Resources was executed on April 3, 2002. A draft amendment, authorizing construction, operation, maintenance, and monitoring, to the Cost Share Agreement has been prepared.

C. Notification from the State or the Corps that landrights will be finalized in a short period of time after Phase 2 approval.

FWS has received verbal notification from DNR that landrights will be finalized in a relatively short time after Phase 2 approval.

D. A favorable Preliminary Design Review (30% Design Level). The Preliminary Design shall include completion of surveys, borings, geotechnical investigations, data analysis review, hydrologic data collection and analysis, modeling (if necessary), and development of preliminary designs.

A 30% design meeting was held on December 17, 2003, and resulted in favorable reviews of the project design with minor modifications. DNR and FWS agreed on the project design and to proceed with project implementation.

E. Final Project Design Review (95% Design Level). Upon completion of a favorable review of the preliminary design, the Project plans and specifications shall be developed and formalized to incorporate elements from the Preliminary Design and the Preliminary Design Review. Final Project Design Review (95%) must be successfully completed prior to seeking Technical Committee approval.

A 95% design meeting was held on July 29, 2004, and resulted in favorable reviews of the project design with minor modifications. DNR and FWS agreed on the project design and to proceed with project implementation.

F. A draft of the Environmental Assessment of the Project, as required under the National Environmental Policy Act must be submitted thirty days before the request for Phase 2 approval.

A draft EA will be submitted for public comment at least 30 days prior to the October 13, 2004 Task Force meeting.

G. A written summary of the findings of the Ecological Review (See Appendix B).

The following paragraph is from the Recommendations section of the July 2004 draft Ecological Review:

Based on the investigation of similar restoration projects and a review of engineering principles, the LDNR project team feels that the proposed strategies of the Dedicated Dredging on the Barataria Basin Landbridge project will likely achieve the desired ecological goals for the majority of the 20 year project life.

H. Application for and/or issuance of the public notices for permits. If a permit has not been received by the agency, a notice from the Corps of when the permit may be issued.

The FWS has recently applied for a Section 404 permit from the Corps of Engineers, a state Coastal Zone Consistency determination from DNR, and Water Quality Certification from LDEQ. The Section 404 permit application was placed on Public Notice on July 23, 2004. The Corps of Engineers had indicated that the Section 404 permit is expected to be granted by the end of October 2004.

I. A hazardous, toxic and radiological waste (HTRW) assessment, if required, has been prepared.

An HTRW assessment/contaminants screening was conducted by the FWS Lafayette Field Office=s Environmental Contaminants Specialist. It was concluded that project implementation would not encounter any of the known wells or associated oil and gas facilities in the project area and that re-suspension of contaminants from sediment disturbance is not expected. Based on available information, further study is not warranted.

J. Section 303(e) approval from the Corps.

Section 303(e) approval was granted by the Corps via letter dated August 4, 2004.

K. Overgrazing determination from the NRCS (if necessary).

An overgrazing determination was issued on January 12, 2004 by the NRCS and indicated that overgrazing would not be a problem in the project area.

L. Revised cost estimate of Phase 2 activities, based on the revised Project design.

Funding/Budget information:

- 1.) - Specific Phase Two funding request (updated construction cost estimate, three years of monitoring and O&M, etc.)**
- 2.) - Fully funded, 20-year cost projection with anticipated schedule of expenditures**

The specific Phase 2 funding request (updated construction estimate and three years of monitoring and O&M) is \$33,730,712. The revised total fully-funded cost of the project is \$36,150,016. The revised budget sheets, with the anticipated schedule of expenditures, are provided in Attachment 2.

M. Estimate of project expenditures by state fiscal year subdivided by funding category.

| Budget Category | Amount |
|---|---------------------|
| Accrued costs to June 30, 2004 | \$278,174.84 |
| | |
| Budget from July 2004 to June 2005 | |
| Salary | 14,000 |
| Travel | 500 |
| Equipment Usage | 500 |
| Engineering & Design | 25,000 |
| Landrights | 5,000 |
| GIS | 5,000 |
| | |
| Total Projected to June 2005 | \$50,000 |
| Total Including Prior Costs | \$328,174.84 |

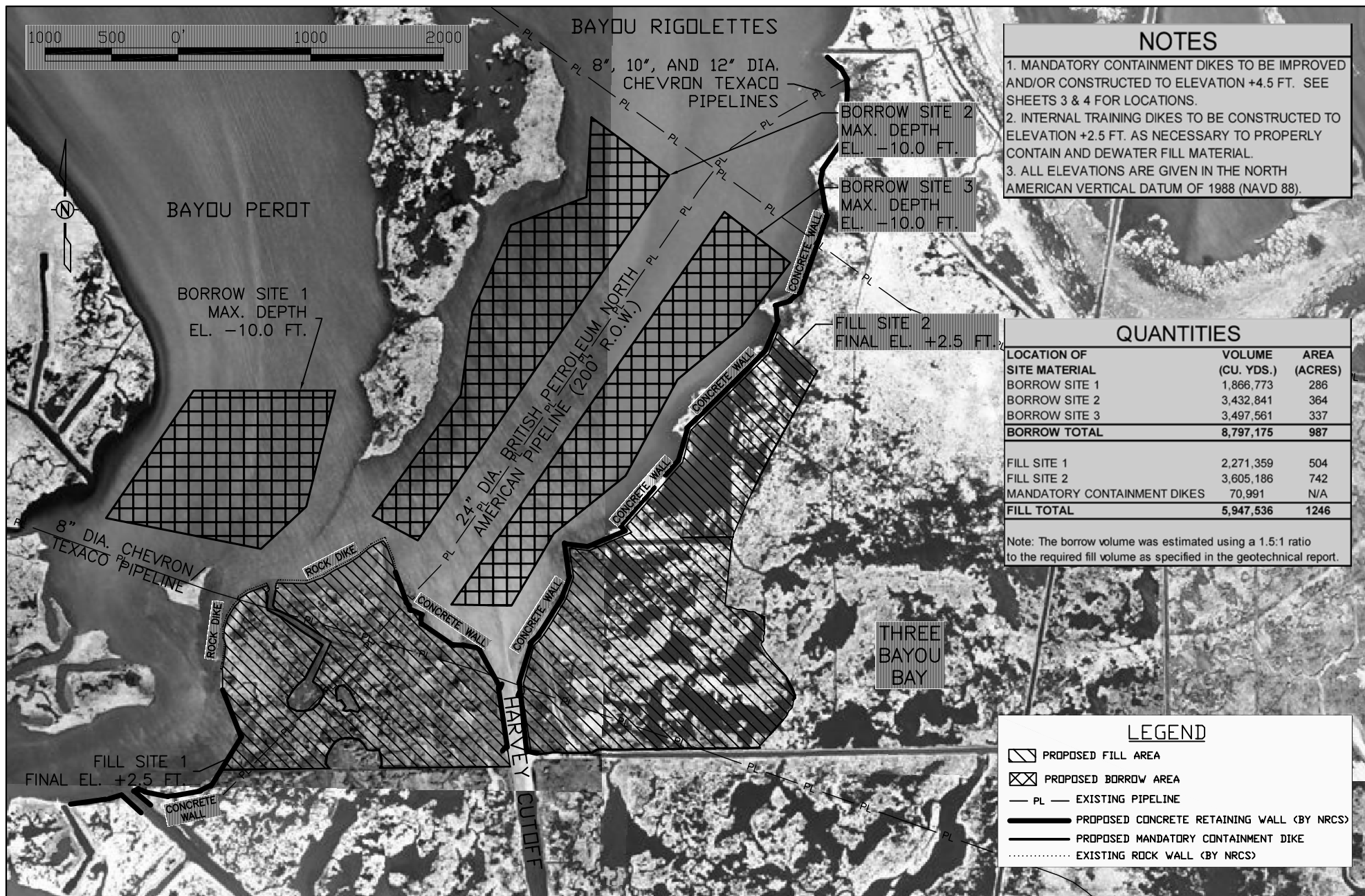
N. A revised Wetland Value Assessment must be prepared if, during the review of the preliminary NEPA documentation, three of the Task Force agencies determine that a significant change in project scope occurred.

A revised Wetland Value Assessment was prepared and reviewed by the Environmental Work Group. The total project area was decreased from 1,282 acres to 1,245 acres. Total Net Acres protected/created/restored by the project increased from 564 acres (Phase 1 project) to 605 acres (Phase 2 project). Net Average Annual Habitat Units decreased from 339 to 337.

O. A breakdown of the Prioritization Criteria ranking score, finalized and agreed-upon by all agencies during the 95% design review.

The following Prioritization Criteria scores were reviewed and agreed upon by all agencies prior to the 95% design meeting.

| Criteria | Score | Weight | Final Score |
|----------------------------|--------------|---------------|--------------------|
| Cost Effectiveness | 5 | 2 | 10 |
| Area of Need | 10 | 1.5 | 15 |
| Implementability | 10 | 1.5 | 15 |
| Certainty of Benefits | 7 | 1 | 7 |
| Sustainability of Benefits | 4 | 1 | 4 |
| HGM – Riverine Input | 0 | 1 | 0 |
| HGM – Sediment Input | 0 | 1 | 0 |
| HGM – Landscape Features | 10 | 1 | 10 |
| Total Score | | | 61 |



NOTES

1. MANDATORY CONTAINMENT DIKES TO BE IMPROVED AND/OR CONSTRUCTED TO ELEVATION +4.5 FT. SEE SHEETS 3 & 4 FOR LOCATIONS.
2. INTERNAL TRAINING DIKES TO BE CONSTRUCTED TO ELEVATION +2.5 FT. AS NECESSARY TO PROPERLY CONTAIN AND DEWATER FILL MATERIAL.
3. ALL ELEVATIONS ARE GIVEN IN THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

QUANTITIES

| LOCATION OF SITE MATERIAL | VOLUME (CU. YDS.) | AREA (ACRES) |
|-----------------------------|-------------------|--------------|
| BORROW SITE 1 | 1,866,773 | 286 |
| BORROW SITE 2 | 3,432,841 | 364 |
| BORROW SITE 3 | 3,497,561 | 337 |
| BORROW TOTAL | 8,797,175 | 987 |
| FILL SITE 1 | 2,271,359 | 504 |
| FILL SITE 2 | 3,605,186 | 742 |
| MANDATORY CONTAINMENT DIKES | 70,991 | N/A |
| FILL TOTAL | 5,947,536 | 1246 |

Note: The borrow volume was estimated using a 1.5:1 ratio to the required fill volume as specified in the geotechnical report.

LEGEND

- PROPOSED FILL AREA
- PROPOSED BORROW AREA
- PL — EXISTING PIPELINE
- PROPOSED CONCRETE RETAINING WALL (BY NRCS)
- PROPOSED MANDATORY CONTAINMENT DIKE
- EXISTING ROCK WALL (BY NRCS)

APPLICATION BY:

U.S. FISH AND WILDLIFE SERVICE
646 CAJUNDOME BLVD., SUITE 400
LAFAYETTE, LA. 70506

LOUISIANA DEPARTMENT OF NATURAL RESOURCES COASTAL ENGINEERING DIVISION

617 NORTH 3RD STREET
BATON ROUGE, LOUISIANA 70804

DEDICATED DREDGING ON THE BARATARIA BASIN LANDBRIDGE

CONSTRUCTION AREA LOCATION

STATE PROJECT NUMBER: BA-36

DATE: MAY 2004

DRAWN BY: SHANE FAUST

DESIGNED BY: SHANNON HAYNES, P.E.

APPROVED BY: LUKE LEBAS, P.E.

FEDERAL PROJECT NUMBER: N/A

SHEET 2 OF 11

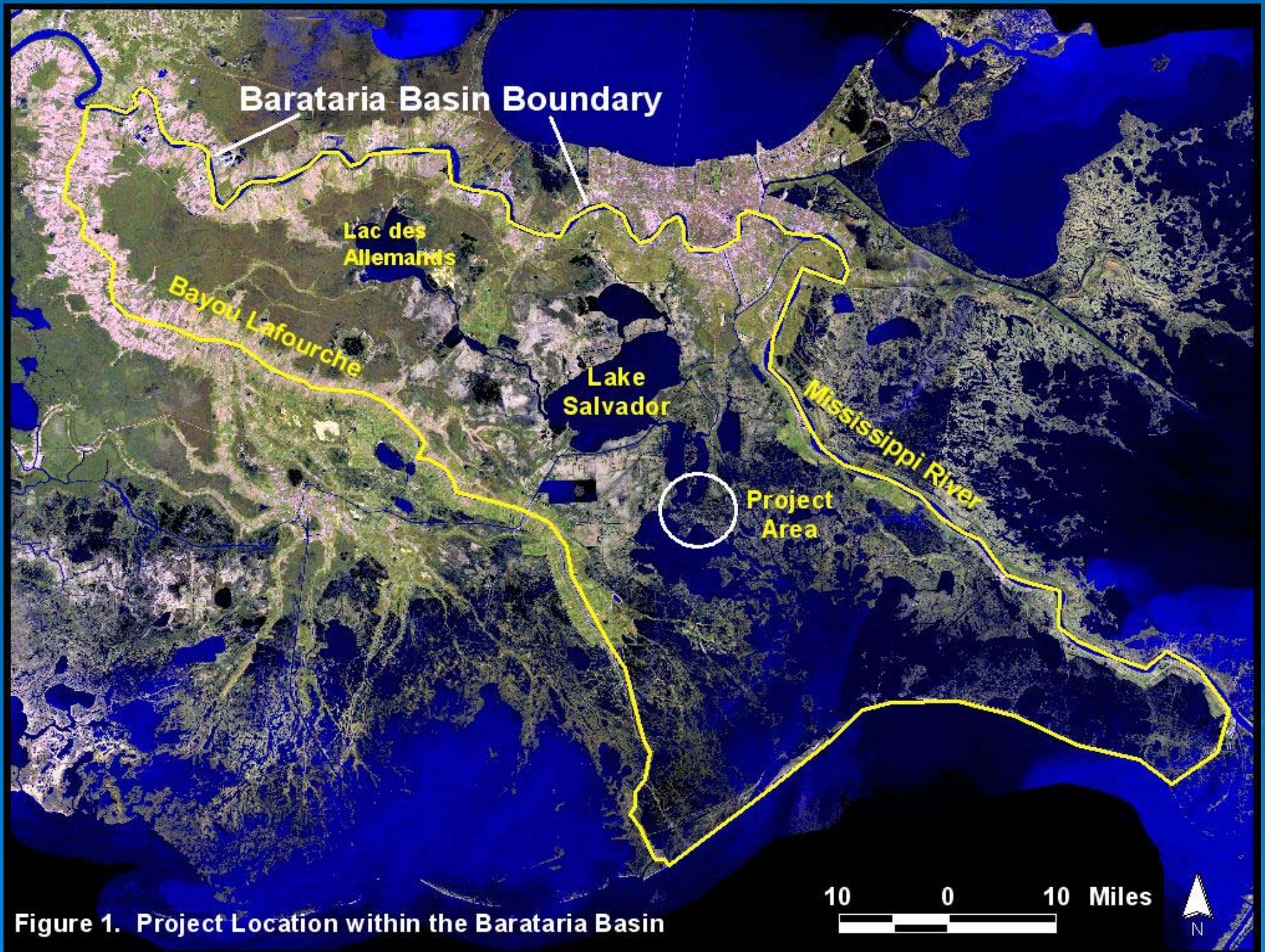
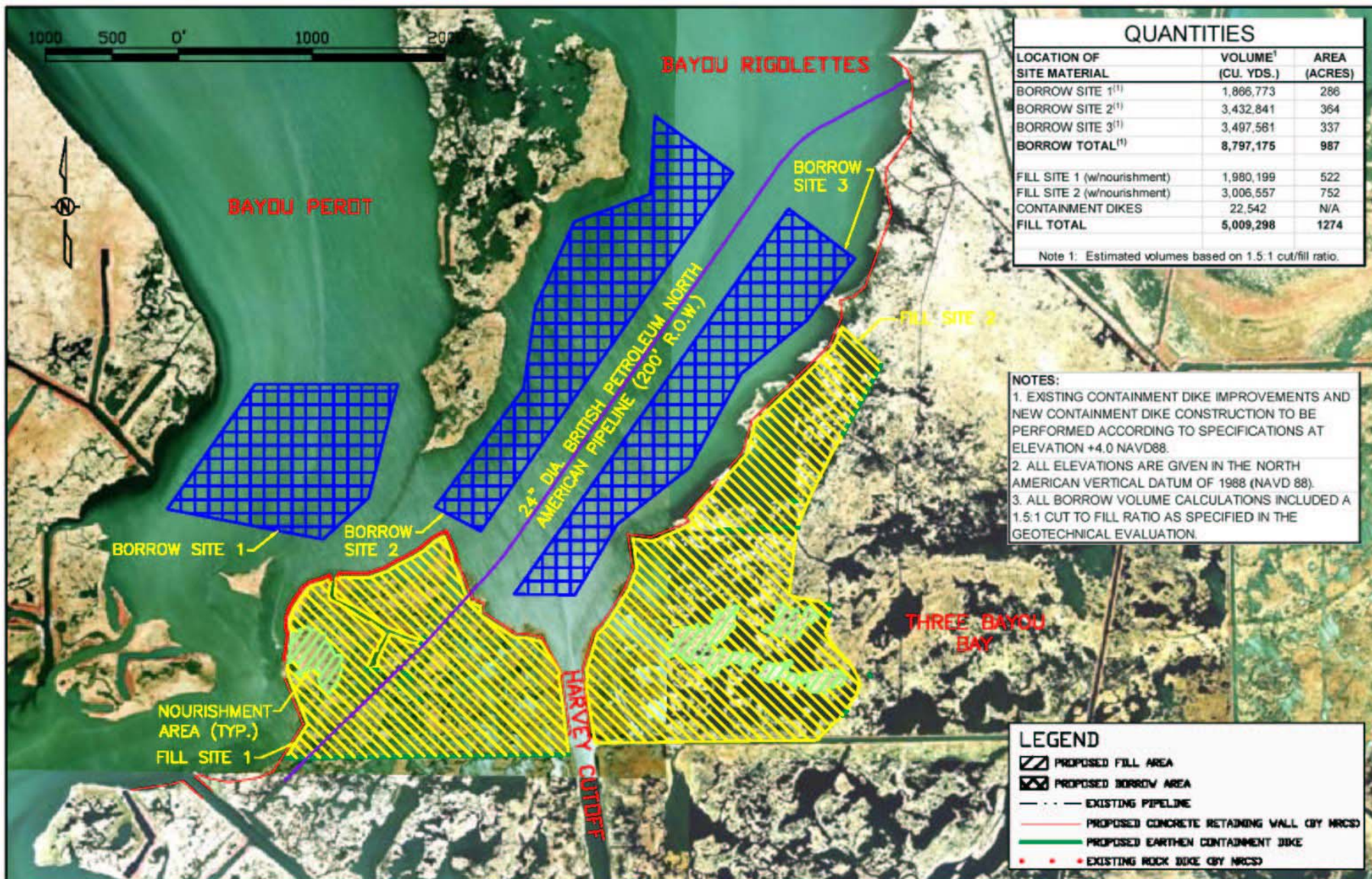


Figure 1. Project Location within the Barataria Basin



QUANTITIES

| LOCATION OF SITE MATERIAL | VOLUME ¹ (CU. YDS.) | AREA (ACRES) |
|------------------------------|--------------------------------|--------------|
| BORROW SITE 1 ⁽¹⁾ | 1,866,773 | 286 |
| BORROW SITE 2 ⁽¹⁾ | 3,432,841 | 364 |
| BORROW SITE 3 ⁽¹⁾ | 3,497,561 | 337 |
| BORROW TOTAL ⁽¹⁾ | 8,797,175 | 987 |
| FILL SITE 1 (w/nourishment) | 1,980,199 | 522 |
| FILL SITE 2 (w/nourishment) | 3,006,557 | 752 |
| CONTAINMENT DIKES | 22,542 | N/A |
| FILL TOTAL | 5,009,298 | 1274 |

Note 1: Estimated volumes based on 1.5:1 cut/fill ratio.

NOTES:

1. EXISTING CONTAINMENT DIKE IMPROVEMENTS AND NEW CONTAINMENT DIKE CONSTRUCTION TO BE PERFORMED ACCORDING TO SPECIFICATIONS AT ELEVATION +4.0 NAVD88.
2. ALL ELEVATIONS ARE GIVEN IN THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
3. ALL BORROW VOLUME CALCULATIONS INCLUDED A 1.5:1 CUT TO FILL RATIO AS SPECIFIED IN THE GEOTECHNICAL EVALUATION.

LEGEND

- PROPOSED FILL AREA
- PROPOSED BORROW AREA
- EXISTING PIPELINE
- PROPOSED CONCRETE RETAINING WALL (BY NRCS)
- PROPOSED EARTHEN CONTAINMENT DIKE
- EXISTING ROCK DIKE (BY NRCS)

APPLICATION BY:

U.S. FISH AND WILDLIFE SERVICE
546 CAJUNDOME BLVD., SUITE 400
LAFAYETTE, LA 70506

LOUISIANA DEPARTMENT OF NATURAL RESOURCES COASTAL RESTORATION DIVISION

617 NORTH 3RD STREET
BATON ROUGE, LOUISIANA 70804

DEDICATED DREDGING ON THE BARATARIA LANDBRIDGE

CONSTRUCTION AREA LOCATION

STATE PROJECT NUMBER: BA-36

DATE: DECEMBER 03, 2003

DRAWN BY: SHANE FAUST

DESIGNED BY: KITCH ANDRUS

APPROVED BY: CHRIS KNOTTS, P.E.

FEDERAL PROJECT NUMBER:

SHEET 2 OF 10

BA-27 Construction Unit 4
Construction to begin January 2005



APR 16 2001

BA-27 Construction Unit 2
Construction Complete



2003 11 5

Checklist of Phase 2 Requirements

- Cost Share Agreement: April 3, 2002.
- Landrights: Finalized shortly after Phase 2 approval.
- 30% Design Review: December 17, 2003.
- 95% Design Review: July 29, 2004.
- Draft EA: Sept. 3, 2004.
- Permits: Section 404 – October 2004.
- Revised Cost Estimate: Fully-funded -\$36.2M
Increment 1 - \$33.7M
- Prioritization Score: 61

Why do we need to fund this project now?

- Not critical to fund the project at this time
- Depends on BA-27/CU4
 - Worst Case – June 2006 (CU4 totally complete)
 - Best Case – BA-27 completes shoreline protection around Fill Site 1 (25% of total project) - Late 2005/Early 2006
- October 2005 Approval – would not allow late 2005 start
- Restores critical area on landbridge which will continue to deteriorate even with shoreline protection



DEPARTMENT OF THE ARMY

NEW ORLEANS DISTRICT, CORPS OF ENGINEERS

P.O. BOX 60267

NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO
ATTENTION OF:

CEMVN-PM-C (1110-2-1150a)

August 27, 2004

MEMORANDUM FOR: Mr. John Saia, Chair, CWPPRA Technical Committee

SUBJECT: Phase II Authorization Request for the Grand Lake Shoreline Protection Project (ME-21), Cameron Parish, LA

The U.S. Army Corps of Engineers (USACE) and Louisiana Department of Natural Resources (LDNR) request Phase II authorization for the Grand Lake Shoreline Protection Project (ME-21). The project was authorized for Phase I as a part of Priority Project List 11 (PPL 11) on January 16, 2002 by the Louisiana Coastal Wetlands Conservation and Restoration Task Force (Task Force) under the authority of the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA). This request is submitted in accordance with the CWPPRA Project Standard Operating Procedures (SOP) Manual.

1. Description of Phase I Project:

A description of the Grand Lake Shoreline Protection candidate project as selected for Phase I authorization is found in Enclosure 1. Enclosure 1 contains the original Fact Sheet and map depicting the project boundary and project features. It includes a description of the conceptual features of the project as authorized for Phase I, a summary of the benefits attributed to the Phase I project and project budget information as estimated at the time of Phase I authorization.

2. Overview of Phase I Tasks, Process and Issues

After receiving Phase I approval on January 16, 2002, the project delivery team (PDT) was assembled with representatives from the USACE and the LDNR. The PDT developed and submitted a work plan to accomplish Phase I activities to the P&E Subcommittee for their review. The PDT also conducted a kickoff meeting and site visit on June 26-27, 2002. Contracts were awarded to conduct hydrographic surveys, magnetometer surveys, and borings. The Engineering Division of the USACE performed the engineering and design for the project. A 30% design review meeting was held on May 11, 2004, which resulted in a letter from the LDNR concurring to proceed with final design. All NEPA documentation was completed resulting in a final Environmental Assessment and a Finding of No Significant Impact (FONSI). The Plans and Specifications were prepared and the Design Report finalized. The USACE Real Estate Division completed the official Real Estate Plan, which defines the real estate requirements in Phase II. The LDNR prepared the Ecological Review. A 95% Design Review Meeting was held on August 16, 2004. The Final Design Report including all supporting appendices were provided for the 95% Design Review Meeting.

3. Description of the Phase II Candidate Project

A. A description of the Grand Lake Shoreline Protection Phase II candidate project is found in Enclosure 3-A. Enclosure 3-A contains the current Fact Sheet and map depicting the project boundary and project features. It includes a detailed description of the features of the project, a summary of the benefits and project budget information.

B. The originally approved Grand Lake Shoreline Protection project started at Superior Canal and terminated at the beginning of Tebo Point. As a result of the Phase I analyses, the USACE and LDNR concluded that it would be beneficial to extend the project to include all of Tebo Point within the project design. This extension increases the rock dike length by approximately 5,700 lf, the benefits by 45 net acres (+9.1%), and the fully funded cost by \$1,370,000 (+9.9%). A table comparing the current project with and without the extension has been enclosed as enclosure 3-B.

C. A table comparing the project at the time of Phase I approval and the current project has been included as enclosure 3-C.

4. Checklist of Phase II requirements:

A. List of Project Goals and Strategies.

Goal #1: To stop shoreline erosion from Superior Canal to Tebo Point.

Goal #2: To promote accretion between the breakwater and the shore.

Coast 2050 Strategy: Regional #16 - Stabilize Grand and White Lakes' shorelines.

B. Since the Cost Sharing Agreement (CSA) between the USACE and the LDNR covers both Phase I and Phase II, it cannot be executed until Phase II approval is given on the day of the Task Force meeting. It will be executed shortly after receiving Phase II approval.

C. The USACE will finalize landrights in a short period of time after Phase II approval. A copy of the approval of the final Real Estate Plan developed by the USACE has been included as Enclosure 4-C.

D. The USACE and the LDNR conducted a favorable 30% Design Review Meeting on May 11, 2004. As a part of that review, the Preliminary Design Report was provided for agency review and comment. The Preliminary Design Report included the results of the surveys, borings, geotechnical investigations, data analysis review, and the preliminary designs. The LDNR sent a letter dated May 12, 2004 that indicated their concurrence to proceed with the final design of the project. A copy of the letter of concurrence and a copy of the sign-in sheet from the meeting have been included as enclosure 4-D.

E. The USACE and the LDNR conducted a favorable 95% Design Review Meeting on August 16, 2004. As a part of that review, the Project plans and specifications and the Final Design Report were provided for agency review and comment. The LDNR sent a letter dated August 30, 2004 that indicated their concurrence to proceed with the Phase II request for the project. A copy of the letter of concurrence and a copy of the sign-in sheet from the meeting has been included as enclosure 4-E.

F. The Environmental Assessment (EA) has been finalized and a copy of the signed FONSI for the project has been included as enclosure 4-F.

G. A summary of the findings of the Ecological Review completed by the LDNR has been included as enclosure 4-G.

H. The application for and/or issuance of the public notices for permits is not applicable to this project. All permits were handled through the NEPA compliance process.

I. The hazardous, toxic and radiological waste (HTRW) assessment, was addressed in the EA.

J. A copy of the signed Section 303(e) approval from the USACE has been included as enclosure 4-J.

K. A copy of the Overgrazing determination from the Natural Resources Conservation Service (NRCS) has been included as enclosure 4-K. The letter indicates that there is no problem with overgrazing within the project area.

L. A revised fully-funded cost estimate of Phase II activities or economic analyses, based on the current Project design has been included as enclosure 4-L and summarized directly below.

Funding/Budget information:

1.) - The specific Phase II funding request (construction cost estimate and three years of O&M) are as follows:

Grand Lake SP with Tebo Point extension: \$12,404,517

Grand Lake SP without extension: \$11,034,716

2.) - The fully-funded 20-year cost estimates are as follows:

Grand Lake SP with Tebo Point extension: \$15,205,000

Grand Lake SP without extension: \$13,835,000

The schedule of expenditures is included in enclosure 4-L.

M. An estimate of project expenditures by state fiscal year subdivided by funding category has been included in enclosure 4-L.

N. A revised Wetland Value Assessment (WVA) was not required for the original project limits because there was not a change in scope as defined by the CWPPRA SOP. A WVA for the Tebo Point extension option was prepared and reviewed by the Environmental Workgroup. The resulting benefits have been included in enclosure 3-A in the benefits write-up.

O. The breakdown of the Prioritization Criteria ranking score, finalized and agreed upon by all agencies prior to the 95% design review has been included as enclosure 4-O.

P. The spreadsheet with the categorical breakdown for Phase 2 has been included as enclosure 4-P.

If you have any questions regarding the subject project, please call Mr. Chris Monnerjahn at (504) 862-2415.

A handwritten signature in black ink, reading "Chris Monnerjahn". The signature is fluid and cursive, with the first name "Chris" and last name "Monnerjahn" clearly distinguishable.

Chris Monnerjahn
Project Manager
Coastal Restoration Branch

Enclosures

Enclosure 1

PPL11 FINAL PROJECT NOMINEE FACT SHEET

Nov 20, 01 pl11NovFS Grand Lake

ME-16-2 Grand Lake Shoreline Protection, from Superior Canal to Tebo Point

Coast 2050 Strategy - Regional #16 - Stabilize Grand and White Lakes shorelines.

Project Location - Region 4, Mermentau Basin, Cameron Parish, south shore of Grand Lake.

Problem -According to a comparison of the 1978-79 aerial photography with 1997-98 photography, shoreline erosion rates in this area vary from 11 to 32 feet per year.

Goals – 1) stop shoreline erosion from Superior Canal to Tebo Point. 2) promote accretion between the breakwater and the shore.

Proposed Solution - Approximately 39,000 feet of stone breakwater will be built in Grand Lake at the outer edge of the –2 foot contour from Superior Canal to Tebo Point. The crest elevation will be +2.0 feet NGVD; crest width 4 feet; front and back slopes 1:3; and stone size 650# maximum. Approximately 163,000 tons of riprap will be used. The stone will be placed on geotextile fabric that is 200 lb/inch. Gaps for fish access will be built every 1,000 feet. They will have a top width of 46 feet and extend to the lake bottom. They will be lined with a concrete apron. A flotation channel will be at least 35 feet from the centerline of the dike with a side slope of 1:4 and a depth of –6 feet. Material from the flotation canal will be cast inside the breakwater.

Project Benefits – The project would benefit 445 acres of fresh marsh and 717 acres of open water (total 1,162 acres). Shoreline loss would be prevented and some marsh would accrete south of the breakwater so at the end of 20 years, 495 acres of marsh would be protected/created.

Preliminary Costs – The total fully funded cost is \$13,562,500. The fully funded first cost is \$9,559,700.

Risk/Uncertainty and Longevity/Sustainability – There will be a low degree of risk associated with this project because monitoring has indicated that breakwaters significantly reduce erosion. The project should continue providing benefits more than 20 years after construction because some rocks will be replaced at years 5 and 15.

Sponsoring Agency and contact Persons – Corps of Engineers

Sue Hawes, COE, 504 862-2518 suzanne.r.hawes@mvn02.usace.army.mil

Christopher Alfonso, 504 862-2401 christopher.d.alfonso@mvn02.usace.army.mil



0.5 0 0.5 Miles

0.5 0 0.5 1 1.5 Kilometers



Project area



Proposed Breakwater

Data Source:
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station

LA Department of Natural Resources
Coastal Restoration Division

Map Date: November 16, 2001
Map ID: 200204142

Image Data:
1990 SPOT Panchromatic Imagery

CWPPRA PPL11
Region 4

Grand Lake Shoreline Protection
Superior Canal to Tebo Point
(ME-16-2)

Enclosure 3-A

FINAL PROJECT FACT SHEET

August 25, 2004

Project Name: Grand Lake Shoreline Protection, ME-21

Coast 2050 Strategy: Regional #16 - Stabilize Grand and White Lakes shorelines.

Project Location: Region 4, Mermentau Basin, Cameron Parish, south shore of Grand Lake.

Problem: According to a comparison of the 1978-79 aerial photography with 1997-98 photography, shoreline erosion rates in this area vary from 11 to 32 feet per year.

Goals: 1) stop shoreline erosion from Superior Canal to Tebo Point. 2) promote accretion between the breakwater and the shore.

Proposed Solution: The final design consists of constructing approximately 37,800 linear feet of rock dike stretching from Superior Canal to the mouth of Catfish Lake with an option to place up to an additional 5,700 feet of dike to the west of the base project footprint (option reach). The Technical Committee and Task Force will be given the option to fund the increased length. This fact sheet covers both funding alternatives up for consideration. The rock dike will be situated along the -1.0-ft NAVD 88 contour in approximately 2.0 feet to 3.0 feet of water, stage dependant. The dike crown will be constructed to an elevation of +3.0 NAVD88 (+/-0.25') and have a width of approximately 4.0 feet. The dike will have front and back side-slopes of 1.0-foot vertical on 1.5-foot horizontal. It will be constructed by placing 650# maximum stone on a layer of geotextile fabric. Gaps for fish access will be built at approximate 1,000-foot intervals. A flotation channel will be dredged parallel to and lake-ward of the rock dike, no closer than 45 feet from the centerline of the dike. The maximum allowable dredging depth for the flotation channel is -5.5 feet NAVD 88. All material from the flotation channel will be cast inside of the rock dike.

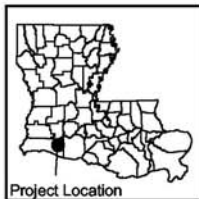
Project Benefits: The 37,800 lf of rock dike will benefit 445 acres of existing fresh marsh and 717 acres of open water (total 1,162 acres). Shoreline loss will be prevented and some marsh will accrete south of the breakwater so at the end of 20 years, 495 acres of marsh will be protected/created. The proposed extension around Tebo Point will benefit an additional 45 acres of fresh marsh and an additional 32 acres of open water. At the end of 20 years, an additional 45 acres will be protected/created.

Estimated Fully Funded Costs: The total fully funded cost of the project including the Tebo Point option is \$15,205,000. The total fully funded cost of the base reach is \$13,835,000.

Risk/Uncertainty and Longevity/Sustainability: There will be a low degree of risk associated with this project because monitoring has indicated that breakwaters significantly reduce erosion. The project should continue providing benefits more than 20 years after construction because there is a scheduled maintenance event in year 3 and year 15.

Sponsoring Agency and Contact Persons:

Chris Monnerjahn, USACE PM, 504-862-2415, chris.monnerjahn@mvn02.usace.army.mil
Kenneth Duffy, LDNR PM, 225-342-4106, kend@dnr.state.la.us



0.5 0 0.5 1 1.5 Miles

0.5 0 0.5 1 1.5 Kilometers

Map Source:
US Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station
Baton Rouge, Louisiana

Image Source:
2002 Thematic Mapper Satellite Imagery
January 8, 2002

Map Date: July 29, 2004
Map ID: USGS-NWRC 2004-11-0462

Grand Lake Shoreline Protection Superior Canal to Tebo Point (ME-21)

- Proposed Rock Dike
- Project Boundary

Enclosure 3-B

Enclosure 3-C

Description of Changes From Phase I Approval

There are no changes to project scope from Phase I approval. An option to extend the original project is also up for consideration by the Technical Committee and Task Force. Note the current project with the proposed Tebo Point extension is only 12.1% more than the originally approved fully funded cost.

Comparison to Current Project without extension:

| Description | Project Info at the time of Phase 0 approval (PPL 11) | Project Info at 95% Design Review Mtg. (without ext. option) | Difference |
|--------------------------|---|--|--|
| Length: | ~39,000 lf | 37,800 lf | slightly different bc based on actual dike alignment |
| Placement Location: | @ -2' NGVD contour | @ -1.0' NAVD 88 contour | similar, just difference in datums. |
| Crest El.: | +2.0' NGVD | +3.0' NAVD88 | similar, just difference in datums. |
| Crest Width: | 4 ft | 4 ft | |
| Side Slopes: | 1V:3H | 1V:1.5H | revised based on geotech info |
| Stone Size: | 650# max | 650# max | |
| Fish Dip Spaces: | every 1,000 lf | every 1,000 lf | |
| Project Benefits: | 495 net acres | 495 net acres | No change |
| Total Fully Funded Cost: | \$13,562,500 | \$13,835,000 | 2.0% |

Comparison to Current Project with Tebo Point extension:

| Description | Project Info at the time of Phase 0 approval (PPL 11) | Project Info at 95% Design Review Mtg. (with ext. option) | Difference |
|--------------------------|---|---|-------------------------------------|
| Length: | ~39,000 lf | 43,500 lf | Increase of 4,500 lf |
| Placement Location: | @ -2' NGVD contour | @ -1.0' NAVD 88 contour | similar, just difference in datums. |
| Crest El.: | +2.0' NGVD | +3.0' NAVD88 | similar, just difference in datums. |
| Crest Width: | 4 ft | 4 ft | |
| Side Slopes: | 1V:3H | 1V:1.5H | revised based on geotech info |
| Stone Size: | 650# max | 650# max | |
| Fish Dip Spaces: | every 1,000 lf | every 1,000 lf | |
| Project Benefits: | 495 net acres | 540 net acres | 45 net acres more 9.09% |
| Total Fully Funded Cost: | \$13,562,500 | \$15,205,000 | 12.1% |

Enclosure 4-C

MEMORANDUM FOR Commander, New Orleans District

SUBJECT: Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA),
Grand Lake Shoreline Protection Project, Cameron Parish, Louisiana, Real Estate Plan
(REP)

1. Forwarded herewith for review and approval is the REP for the Grand Lake Shoreline Protection Project, a feature of CWPPRA.
2. It is requested that you approve this REP.

Encl



WILLIAM C. LEWIS, JR.
Chief, Real Estate Division

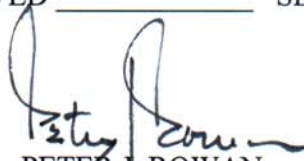
CEMVN-DE

Commander, New Orleans District

FOR Chief, Real Estate Division

APPROVED Box DISAPPROVED _____ SEE ME _____

Encl



PETER J. ROWAN
Colonel, EN
Commanding

Enclosure 4-D

State of Louisiana



KATHLEEN BABINEAUX BLANCO
GOVERNOR

SCOTT A. ANGELLE
SECRETARY

DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL RESTORATION AND MANAGEMENT
May 12, 2004

Colonel Peter J. Rowan
District Engineer
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, LA 70160-0267

Re: 30% Design Review for Grand Lake Shoreline Protection (ME-21)
Statement of Local Sponsor Concurrence

Dear Col. Rowan:

The 30% design review meeting was held on May 11, 2004 for the Grand Lake Shoreline Protection (ME-21) project. Based on our review of the technical information compiled to date, the ecological review, the preliminary land ownership investigation, and the preliminary designs, we, as local sponsor, concur to proceeding with the design of the project, with the understanding that the two increments above baseline, Options A and B, will be contingent on an assessment of the cultural resources site near Tebo Point. Since no oyster leases will be affected by this project, there has been no assessment of potential impacts.

In accordance with the CWPPRA Project Standard Operating Procedures Manual, we request that you forward this letter of concurrence along with the revised project cost estimate to the Technical Committee and the Planning and Evaluation Subcommittee. We also request that our project manager, Ken Duffy, be copied on this and other correspondence concerning this project.

Please do not hesitate to call if I may be of any assistance.

Sincerely,

Handwritten signature of Christopher P. Knotts in black ink.

Christopher P. Knotts, P.E.
Director

cc: David Burkholder, Engineer Manager
Luke Le Bas, Engineer Manager
Ken Duffy, Project Manager

COASTAL ENGINEERING DIVISION
P. O. BOX 44027 • BATON ROUGE, LA 70804-4027 • 617 N. THIRD STREET • 10TH FLOOR • BATON ROUGE, LA 70802
PHONE (225) 342-7308 • FAX (225) 342-9417 • WEB <http://www.dnr.state.la.us>
AN EQUAL OPPORTUNITY EMPLOYER

TOTAL P.01

11 May 2004

30% Design Review

CWPPRA - GRAND LAKE Shoreline Protection

- 1.) MAURICE "Sto" Falk (504) 862-1834 Maurice.s.falk@mvn02.usace.army.mil
- 2.) CHRIS Monnerjahn 504 862-2415 chris.monnerjahn@mvn02.usace.army.mil
- 3.) Ed Blodgett 2481
- 4.) Keith O'Caia 504-862-2746 Keith.J.O'Caia@mvn02.usace.army.mil
5. Gary Hanneman 862-1011 gary.a.hanneman@ " " " "
6. LARRY DRESSLER 504-862-2985 LAWRENCE.S.DRESSLER@mvn02.usace.army.mil
7. Robert Dubois 337-291-3127 robert.dubois@fws.gov
8. Fay Lachney 504-862-2309 Fay.Lachney@mvn02.usace.army.mil
9. Yvonne Barbier 504-862-1173 barbier@usace.army.mil
10. PATTY TAYLOR 214-665-6403 Taylor.Patricia-A@epa.gov
11. Mark Stead 225-342-9430 Marks@dnr.state.la.us
12. Will Norman 225-342-9432 charlesn@dnr.state.la.us
13. AMANDA PHILLIPS 225-219-0380 amanda.phillips@la.gov
14. Charles Everhardt 504-862-2356 charles.everhardt@mvn02.usace.army.mil
15. Eric D. Roth 225-342-7329 ericro@dnr.state.la.us
16. Ken Duffy 225-342-4106 ken.duffy@la.gov
17. Mark Mouldous 337-482-0661 markm@la.gov
18. GREG DEBOSE 504-862-2452 gregory.a.debose@mvn02.usace.army.mil
19. Beth McCasland 504-862-2021 elizabeth.l.mccasland@mvn02.usace.army.mil
20. Pat Landry 337 482-0680 patrick.landry@la.gov
21. STAN AUCOIN (337) 482-0681 STANLEY.AUCOIN@LA.GOV
22. RENEE RUSSELL 504-862-2989 RENEE.M.RUSSELL@mvn02.usace.army.mil
23. Pat Forbes 225-342-3968 pat.forbes@gov.state.la.us
24. Paul Hyhbanks 504 862-1100 Paul.J.Hyhbanks@mvn02.usace.army.mil
25. Sean Mickal 504 862-2319 sean.p.mickal@ "

Enclosure 4-E

State of Louisiana

KATHLEEN BABINEAUX BLANCO
GOVERNOR



SCOTT A. ANGELLE
SECRETARY

DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL RESTORATION AND MANAGEMENT

August 30, 2004

Mr. John Saia
Deputy District Engineer for Project Management
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, LA 70160-0267

Re: 95% Design Review for Grand Lake Shoreline Protection (ME-21)
Statement of Successful Completion

Dear Mr. Saia:

The 95% design review meeting was successfully completed on August 16, 2004 for the Grand Lake Shoreline Protection (ME-21) project. Based on our review of the Final Design Report, plans and specifications, the Ecological Review, and the environmental compliance documentation, as local sponsor, we concur to request permission from the Technical Committee to proceed to Phase II for this project.

In accordance with the CWPPRA Project Standard Operating Procedures Manual, we request that you forward the items required in Appendix C -- Information Required in Phase II Authorization Requests to the CWPPRA Technical Committee for subsequent approval by the CWPPRA Task Force. We also request that our project manager, Kenneth Duffy, be copied on this and all other correspondence concerning this project.

Please do not hesitate to call if I may be of any assistance.

Sincerely,

Christopher P. Knotts, P.E.
Director

CPK:KCD:kcd

cc: John Hodnett, P.E., Engineer Manager
Luke LeBas, P.E., Engineer Manager
Kenneth Duffy, Ph.D., Project Manager
Amanda Phillips, P.E., Project Engineer



ATTENDANCE RECORD



| DATE | SPONSORING ORGANIZATION | LOCATION | |
|---|---|--|------------------|
| 16 August 2004 | COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT | U.S. Army Corps of Engineers New Orleans District Room 304 | |
| PURPOSE: 95% Design Review Meeting for the Grand Lake Shoreline Protection Project | | | |
| PARTICIPANT REGISTER* | | | |
| NAME | JOB TITLE AND ORGANIZATION | E MAIL ADDRESS | TELEPHONE NUMBER |
| Chris Monnerjahn | USACE, PM | chris.monnerjahn@mvn02.usace.army.mil | 504-862-2415 |
| Ken Duffy | DNR, PM | ken.duffy@la.gov | 225-342-4106 |
| Amanda Phillips | DNR, ENG. | amanda.phillips@la.gov | 225-219-0320 |
| Mark Stead | DNR, CRD | marks@dnr.state.la.us | 225-342-9430 |
| LARRY DRESSLER | USACE, GEOTECH | LAWRENCE.DRESSLER@MVN02.USACE.ARMY.MIL | 504-862-2985 |
| Christina Kramer | USACE, Cost Eng. | Christina.A.Kramer@MVN02.usace.army.mil | 504-862-1218 |
| Beth McCasland | USACE PM-RS | elizabeth.l.mccasland@mvn02.usace.army.mil | 504-862-2021 |
| RENÉE RUSSELL | USACE RE-L | rene.e.m.russell@mvn02.usace.army.mil | 504-862-2989 |
| FAY LACHNEY | USACE RE-E | fay.lachney@usace.army.mil | 504-862-2309 |
| Kelly Dunn | USACE RE-L | Kelly.g.dunn@mvn02.usace.army.mil | 504-862-2230 |
| Gary Hanneman | Lusfer | gary.g.hanneman@MVN02.USACE.ARMY.MIL | 504-862-1011 |
| Charlie Everhardt | CD - CV | charles.everhardt@mvn02.usace.army.mil | 504-862-2356 |
| Mike Bourgeois | CD - QM | corps email | 862-1520 |
| John Lopez | USACE-PM-C | John.A.Lopez@ | 862-1945 |
| Mark Mouldeau | LDNR - CRD | markm@la.gov | 337-482-0661 |
| STAN AUCOIN | LDNR/CEO | STANLEY.AUCOIN@LA.GOV | 337-482-0681 |
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Enclosure 4-F



DEPARTMENT OF THE ARMY

NEW ORLEANS DISTRICT CORPS OF ENGINEERS

P.O. BOX 60267

NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO
ATTENTION OF:

Planning, Programs, and
Project Management Division
Environmental Planning
and Compliance Branch

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

Grand Lake Shoreline Protection Project
Cameron Parish, Louisiana
EA # 380

Description of Proposed Action. The proposed action consists of building approximately 39,000 feet of stone breakwater along the south shore of Grand Lake in Cameron Parish, Louisiana. The breakwater will stretch westward from Superior Canal to the mouth of Catfish Lake, ending approximately 1,600 feet east of Tebo Point. This breakwater would be built at the outer edge of the 2-foot depth contour (estimated -1.2 ft North American Vertical Datum 1988 [NAVD 88] equivalent). Dimensions of the breakwater would be a crest elevation of +3.5 feet NAVD 88, a 4-foot crest width, and 1:5 front and back slopes. Stone size for the breakwater would be 650 pounds maximum (largest stones would be approximately 24 inches in diameter), and the dike would require approximately 185,000 tons of stones. The stones would be placed on geotextile separator fabric with a tensile strength of 3,600 pounds per linear foot. Gaps for fish access would be built approximately every 1,000 feet, would have a top width of 50 feet, and would extend to the lake bottom, with an approximate bottom width of 36 feet. A flotation channel for equipment access would be at least 45 feet from the centerline of the dike with side slopes of 1:2 and a depth of 5 feet. Material from the flotation canal would be cast inside the breakwater where feasible. Additional access dredging is likely to be required in the vicinity of the project site in order to allow rock transport from the Mermentau River to the project site. Controlling water depth would be 5 feet. Dredged material would be stockpiled adjacent to the required dredging location during construction, then returned to its pre-project location upon project completion. Shoreline loss would be prevented and some marsh would accrete south of the breakwater so at the end of 20 years, 495 acres of marsh would be protected and/or created.

Factors Considered in Determination. This office has assessed the impacts of the proposed action on significant resources, including Grand Lake, wetlands, fisheries, wildlife, essential fish habitat, endangered or threatened species, cultural resources, recreational resources, aesthetics, and air quality. No significant adverse impacts were identified for any of the significant resources. The risk of encountering HTRW is low. By a letter dated 7 May 2003, the U.S. Fish and Wildlife Service confirmed that the proposed action is not likely to adversely affect any endangered or threatened species. In a letter, dated 11 March 2004, the Louisiana Department of Natural Resources concurred with the determination that the proposed action is consistent, to the maximum extent practicable, with the Louisiana Coastal Resources Program (Coastal Zone Consistency #C20040024).

A Water Quality Certificate, (#030801-08 / AI 117263 / CER20030001) dated 23 January 2004 was received from the Louisiana Department of Environmental Quality. Review of the Section 404(b)(1) Public Notice was completed on 7 November 2003. The Section 404(b)(1) Evaluation was signed on 30 October 2003. In a letter dated 3 March 2004, the Louisiana State Historic Preservation Officer concurred with a recommendation of no effect on historic properties. This office has concurred with, or resolved, all Fish and Wildlife Coordination Act recommendations contained in a letter from the U.S. Fish and Wildlife Service, dated 13 February 2004. This office has concurred with, or resolved, all Essential Fish Habitat recommendations contained in a letter from NOAA Fisheries, dated 11 March 2004.

Environmental Design Commitments. No impacts have been identified that would require compensatory mitigation. The following commitments are an integral part of the proposed action:

1.) If the proposed action is changed significantly or is not implemented within one year, CEMVN will reinitiate coordination with the USFWS to ensure that the proposed action would not adversely affect any Federally listed threatened or endangered species, or their habitat. (USFWS CAR letter dated 13 February 2004)

2.) CEMVN is aware of cultural site 16CM33 on Tebo Point. As the Proposed Action will stop at the mouth of Catfish Lake, approximately 1,600 feet east of Tebo Point, the project should have no effect on this resource. If, during construction, evidence is found that portions of site 16CM33 is located within construction areas, then all construction in the affected areas must cease until an CEMVN-PM-RN archaeologist is notified and appropriate actions can be determined. Furthermore, if in the future, the breakwater would be extended around Tebo Point, then a supplemental EA, including further study of cultural resources, will be required. If any unrecorded cultural resources are determined to exist within the proposed project boundaries, then no work will proceed in the area containing these cultural resources until a CEMVN-PM-RN archeologist has been notified and final coordination with the SHPO and THPO has been completed. (SHPO coordination letter dated 3 March 2004)


3.) Approximately 32 acres of muddy and non-vegetated bottom, would be lost under the footprint of the breakwater; however, the stabilization and creation of approximately 495 acres (or 149 Average Annual Habitat Units) of more desirable freshwater marsh which provides important nursery habitat (essential fish habitat) would make up for this loss. (NOAA Fisheries coordination letter dated 9 February 2004)

Public Involvement. The proposed action has been coordinated with appropriate Federal, state, and local agencies and businesses, organizations, and individuals through distribution of Environmental Assessment # 380 (EA #380) for their review and comment.

Conclusion. This office has assessed the potential environmental impacts of the proposed action. Based on this assessment, and a review of the public comments made on EA #380 a determination has been made that the proposed action would have no significant impact on the human environment. Therefore, an Environmental Impact Statement will not be prepared.

Date

2 Apr 04


 Peter J. Rowan
 Colonel, U.S. Army
 District Engineer

Enclosure 4-G

E C O L O G I C A L R E V I E W

Grand Lake Shoreline Protection

CWPPRA Priority Project List 11

(State No. ME-21)

August 31, 2004

Mark A. Stead
Restoration Technology Section
Coastal Restoration Division
Louisiana Department of Natural Resources

Ecological Review Grand Lake Shoreline Protection

In August 2000, the Louisiana Department of Natural Resources (LDNR) initiated the Ecological Review to improve the likelihood of restoration project success. This is a process whereby each restoration project's biotic benefits, goals, and strategies are evaluated prior to granting construction authorization. This evaluation utilizes environmental data and engineering information, as well as applicable scientific literature, to assess whether or not, and to what degree, the proposed project features will cause the desired ecological response.

I. Introduction

The proposed Grand Lake Shoreline Protection (ME-21) project is located in the Mermentau Basin in Cameron Parish, Louisiana. The project area encompasses the southern shore of Grand Lake from Superior Canal to the mouth of Catfish Lake and may include an optional structural increment that extends westward to Tebo Point (Figure 1). The total area of the Grand Lake Shoreline Protection project is approximately 1,162 acres and is primarily composed of fresh emergent marsh (445 acres) and open water (717 acres) habitats (USACE 2001). Approximately 37,800 feet of Grand Lake shoreline will be protected through the construction of a foreshore rock dike, with an option to protect 5,700 feet of shoreline around Tebo Point.

Coast 2050 identified elevated water levels and wave energy generated by strong frontal winds as the major factors contributing to the rapid erosion of the southern shore of Grand Lake [Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority (LCWCRTF&WCRA) 1999]. Erosion rates calculated by comparing aerial photographs from 1978-1979 to those taken in 1997-1998 revealed that 11 to 32 feet of shoreline was lost annually (USACE 2001). Construction of the foreshore rock dike will prevent the lake from breaching into adjacent open water areas (Lake Benoit and Long Lake) and will protect interior marsh, which without the structure, will be subjected to increased wave energy (LCWCRTF&WCRA 1999). The proposed strategy of protecting and stabilizing the southern shoreline of Grand Lake is supported by the *Coast 2050* Region 4 Ecosystem Strategies which promote the stability and protection of bay, lake, and gulf shorelines for the preservation of interior wetlands and the maintenance of favorable hydrologic conditions.

II. Goal Statement

- Stop erosion along approximately 37,800 linear feet of the southern bank of Grand Lake and as a result save 445 acres of interior emergent marsh that is expected to be lost over the 20 year project life.
- Increase submerged aquatic vegetation (SAV) coverage to 80% in the open water areas from a baseline of 10% over the 20 year project life.
- Create 50 acres of emergent marsh between the Grand Lake shoreline and the foreshore rock dike over the 20 year project life.
- Stop erosion along the shoreline of Tebo Point and as a result save 28 acres of emergent marsh that is expected to be lost over the 20 year project (optional goal).

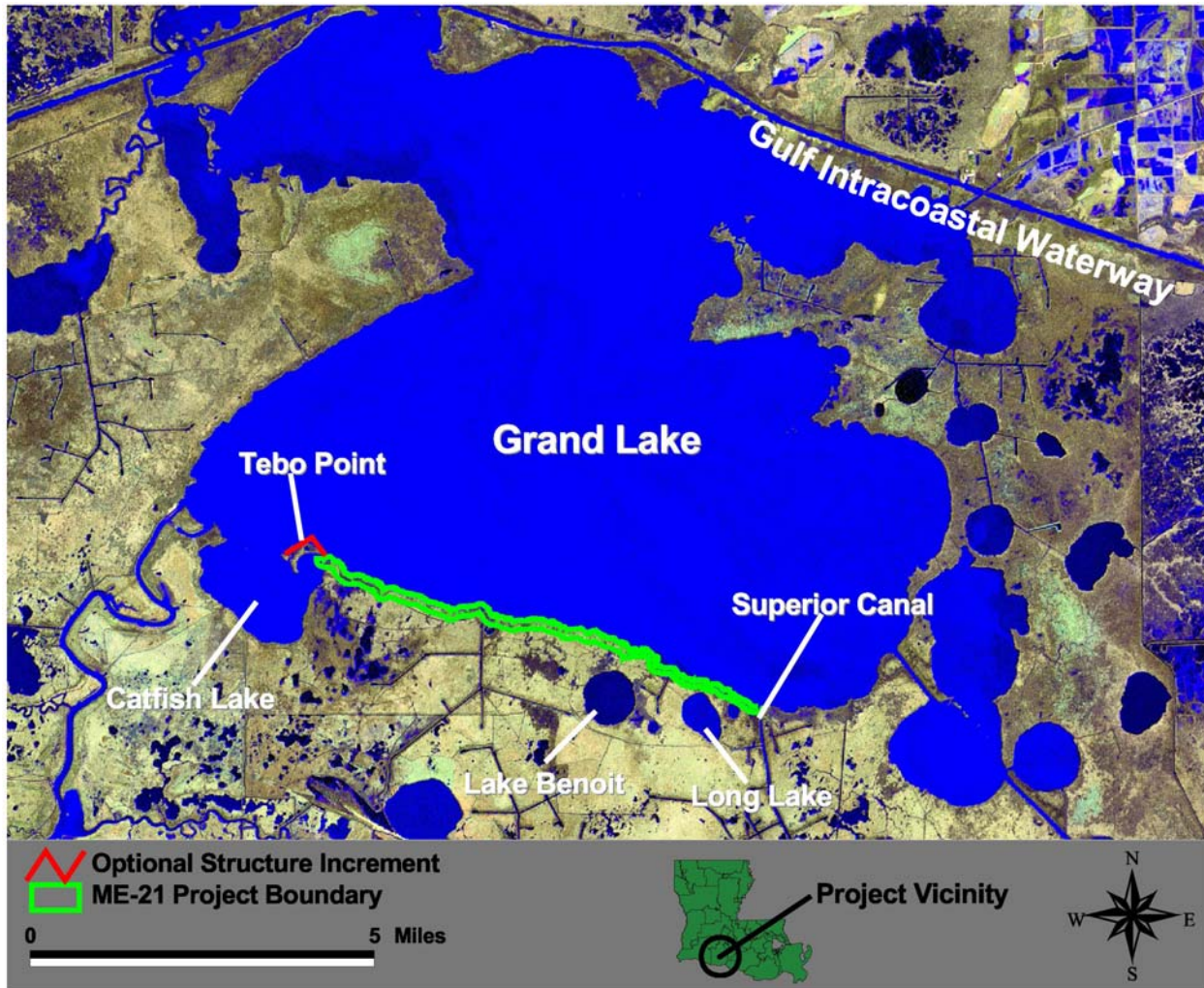


Figure 1. Grand Lake Shoreline Protection project area.

III. Strategy Statement

The project goals will be achieved through the construction of an approximately 37,800 foot foreshore rock dike along the southern shore of Grand Lake from Superior Canal to the mouth of Catfish Lake with the option of including an additional 5,700 feet of structure around Tebo Point.

IV. Strategy-Goal Relationship

The construction of a foreshore rock dike will stop erosion along the southern Grand Lake shoreline by dampening wind generated waves. The stabilization of the lake shoreline will in turn protect interior marsh from being exposed to wave energy. Marsh accretion is expected to occur behind the shoreline protection structure due to the occasional overwash of waves and subsequent deposition of sediment. Additional marsh creation benefits will be achieved through the strategic placement of dredged spoil from the digging of the flotation canals.

The construction of the foreshore rock dike is expected to increase the overall percentage of SAV coverage in the area behind the shoreline protection structure from 10% to 80%. SAV

habitat creation is expected to occur due to the reduction of turbidity in the shallow open water areas and the resulting increase in overall light penetration.

V. Project Feature Evaluation

A 37,800 foot foreshore rock dike will be constructed along the southern shore of Grand Lake 200 feet from the existing shoreline at the -1.0 NAVD-88 foot contour from Superior Canal to the mouth of Catfish Lake. In addition, an optional plan is in place to extend the structure an additional 5,700 feet westward around Tebo Point and continuing southwest to protect the entire island (Figure 1). The crest elevation of the rock dike structure will be built at an approximate height of $+3.0 \pm 0.25$ feet NAVD-88 (Figure 2). Settlement is expected to occur during construction. To offset this initial loss, the contractor will add rock material to the structure as needed to achieve the desired design height before demobilization. The breakwater will have front and back side-slopes of 1(V) on 1.5(H) and a crest width of 4 feet. All stone sizing will conform to standard 24 inch rock gradation placed on 200 pound/inch² geotextile fabric. Fish dips measuring 50 feet wide and lined with a layer of rock will be constructed every 1,000 feet to allow organism egress and ingress.

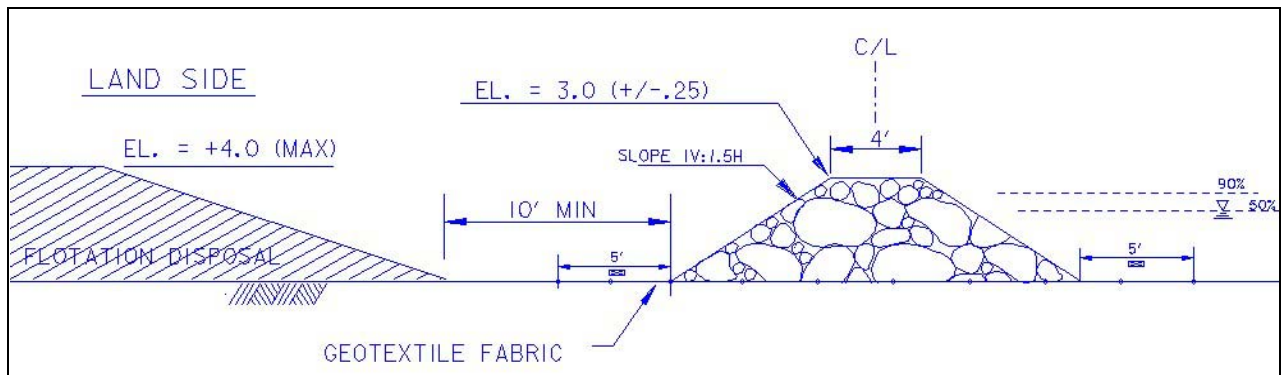


Figure. 2: Typical dike section (USACE 2004).

Originally the crest elevation of the shoreline protection structure for the Grand Lake project was designed at +3.5 feet NAVD-88 which was calculated by adding the following three factors: mean water elevation, 90% wind setup, and 90% wave height. However, protecting against 90% of the wave height was considered a conservative estimation of the conditions in the Grand Lake project area. Project engineers felt that designing the rock dike to protect against $\frac{1}{2}$ of the 90% wave height would reduce the cost and overall pressure on the soil foundation while still providing adequate shoreline protection. As a result, the current structure elevation design of +3.0 feet NAVD-88 was determined through the addition of the Grand Lake mean water level (+1.45 feet), 90% wind setup (0.50 feet), and $\frac{1}{2}$ of the 90% wave height (0.85 feet). This design technique results in 0.2 feet of the rock dike remaining sub-aerial during storm conditions.

The geotechnical analysis (USACE 2003) revealed a relatively poor soil foundation in the project area. The soils near the southern bank of Grand Lake consist of soft and organic clays with occasional lenses of soft clay, silt, silty sand and occasional wood. Pleistocene deposits reside nine feet underneath the upper swampy marsh deposits and consist of interbedded, highly oxidized, stiff clays. The geotechnical analysis indicated that the foundation clays are over consolidated and little consolidation settlement is expected to occur (USACE 2003). After

construction, lateral spreading will cause settlement of approximately 1.76 feet with a second lift expected in three years to maintain a crest elevation of +3.25 NAVD-88. It is estimated that after the three year maintenance lift the structure will ultimately settle to a crest height of +2.56 feet NAVD-88 by year twenty. The initial placement elevation for the Grand-White Lakes Landbridge Protection (ME-19) project, which is in the vicinity of the Grand Lake Shoreline Protection project, was built at an elevation of +2.5 NAVD-88.

According to the settlement consolidation curves, the structure elevation will fall below mean water level (+1.45 feet NAVD-88) two years post-construction, one full year before the scheduled maintenance lift planned for year three (Figure 3). It is conceivable that once submerged the foreshore rock dike will become somewhat less effective as a shoreline protection structure, and a possible threat to navigation. However, project team members determined that the benefits of the shoreline protection structure would not be significantly reduced in view of the fact that the structure would be submerged for a relatively short period of time. In addition, the dredged material placed on the landward side of the rock dike would offer further protection to the Grand Lake shoreline. To avoid possible threats to navigation, the structure will be adequately marked.

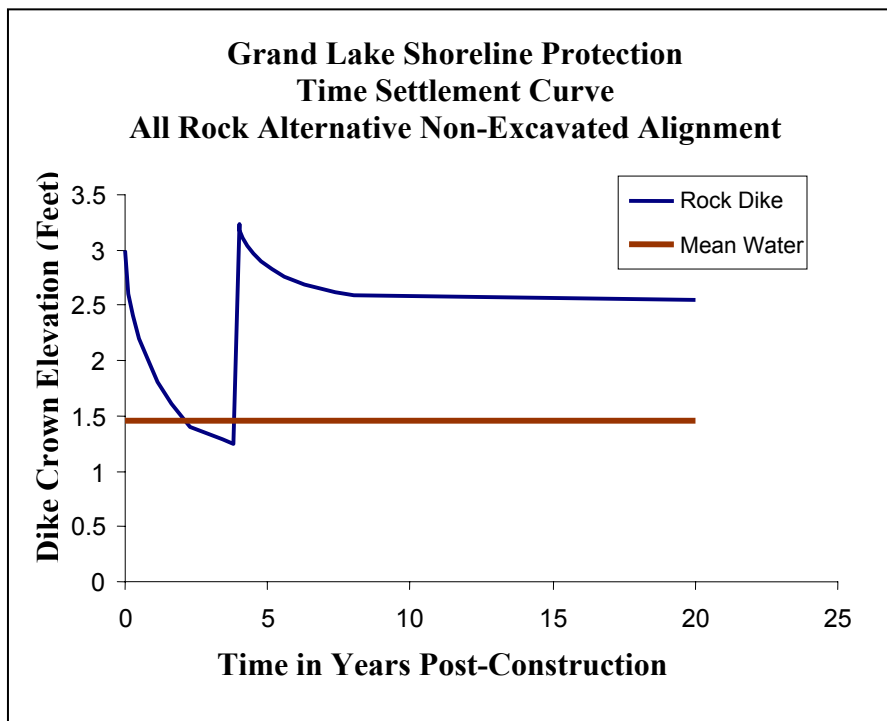


Figure 3. Time settlement curve for proposed Grand Lake foreshore rock dike after construction.

The need for a flotation canal to allow access for construction barges and equipment will produce a significant amount of dredged spoil. It is estimated that approximately 120 acres of fresh emergent marsh will be created through the beneficial use of the dredged material. Maximum allowable dredging depth of the flotation channel will be -5.0 feet NAVD-88. The spoil will be stacked at a target elevation of +3.0 feet NAVD-88 and at a maximum elevation of +4.0 feet NAVD-88. The material will be placed at a minimum of 10 feet landward from the toe

of the foreshore rock dike and 50 feet seaward of the shoreline. It is expected that the dredged spoil, through the dewatering and consolidation process, will settle to a final elevation of +1.5 to +1.9 feet NAVD-88 at year twenty. This elevation is considered optimal for healthy unbroken marsh and is consistent with the surrounding marsh elevation in the Grand Lake project areas (USACE 2004).

A possible cultural resource site (Indian midden mound) exists near the western most edge of Tebo Point. At the 30% Design Review meeting for the Grand Lake Shoreline Protection project, it was believed that dredging a flotation canal near Tebo Point could destroy valuable cultural artifacts. However, a recent United States Army Corps of Engineers archeological survey of the area determined that the footprint of the midden mound at Tebo point was not as large as originally estimated. As a result, the dredging of the flotation canal for placement of the rock material around the shoreline of Tebo Point would not likely endanger any cultural resources. Construction of the rock dike at the shoreline of Tebo Point would likely preserve any cultural resources from erosional forces while providing protection to the western flank of the Grand Lake shoreline (Figure 1). The placement of the shoreline protection structure around Tebo Point is considered optional since the increment was not included in the original project plans or Wetland Value Assessment. The decision to exercise any part of the option will be made by the Contracting Officer of Record, during construction, provided the Coastal Wetlands Conservation and Restoration Task Force approves the project to the maximum length.

VI. Assessment of Goal Attainability

Environmental data and scientific literature documenting the effects of the proposed project features in field application are evaluated below to assess whether or not, and to what degree the project features will the desired ecological response.

Armor Shoreline Protection

A number of projects using traditional shoreline protection structures have been implemented in Louisiana coastal areas to protect lake, bay, and navigational channel shorelines (Table 1). Published results of projects funded under CWPPRA and through the State of Louisiana that have used rock shoreline protection structures constructed in environments similar to the Grand Lake Shoreline Protection project are discussed below.

- The Boston Canal/Vermilion Bay Bank Protection (TV-09) project was designed to abate wind-driven wave erosion along Vermilion Bay and at the mouth of Boston Canal (Thibodeaux 1998). To accomplish that goal a 1,405 foot foreshore rock dike was constructed in 1995 at an elevation of +3.8 feet NGVD-29 along the bank of Boston Canal extending into Vermilion Bay. In 1997, two years after construction, the project was estimated to have protected 57.4 acres of marsh and 1.4 to 4.5 feet of sediment was deposited behind the breakwater while the reference area continued to erode. The rock breakwater at the mouth of Boston Canal was successful in stabilizing the shoreline (Thibodeaux 1998).
- Lake Salvador Shoreline Protection Demonstration (BA-15) project evaluated a series of shoreline protection measures at Lake Salvador, St. Charles Parish, Louisiana. Phase two of this project was conducted in 1998 and evaluated the effectiveness of a rock berm to protect the lake shoreline from higher energy wave erosion. Shoreline

surveys conducted behind the berm five months after construction indicated that the shoreline was still eroding. Subsequent surveys were not conducted due to poor weather conditions (LDNR 2000). The rock structure itself appears to be holding up well, showing little sign of deterioration and subsidence. The structure was designed to be constructed with a crest elevation of +4.0 feet NAVD-88. However, a 2002 survey of the rock dike determined that the average height of the structure was +2.51 feet NAVD-88. The average settlement of the structure, measured from 1998 to 2002, was approximately 0.29 feet. It was concluded that the rock dike was built to an inadequate crest elevation of +2.75 feet NAVD-88 (Darin Lee, LDNR, Personal Communications, July 19, 2002).

Table 1. Design Parameters of Constructed Shoreline Protection Projects (Sorted by Construction Date).

| Project Name | Project Number | Region | Construction Date | Depth Contour (NAVD-88) | Length of Structure (feet) | Height | Distance From Shoreline (feet) |
|---|----------------|--------|-------------------|-------------------------|----------------------------|---|--------------------------------|
| Blind Lake | N/A* (State) | 4 | 1989 | N/A | 2,339 | 4.0 ft NAVD-88 | 70 |
| Cameron Prairie National Wildlife Refuge Shoreline Protection | ME-09 | 4 | 1994 | -1.0 ft | 13,200 | 3.7 ft NAVD-88 | 0-50 |
| The Freshwater Bayou Bank Protection | TV-11 (State) | 3 | 1994 | N/A | 25,800 | 4.0 ft NAVD-88 | N/A |
| Turtle Cove | PO-10 (State) | 1 | 1994 | N/A | 1,640 (rock gabion) | 3 ft (MWL) | 300 |
| Bayou Segnette | BA-16 (State) | 2 | 1994,1998 | N/A | 6,800 | 3.0-5.0 ft NAVD-88 | N/A |
| Boston Canal/Vermilion Bay Bank Protection | TV-09 | 3 | 1995 | N/A | 1,405 | 3.8 ft NGVD-29 | N/A |
| Clear Marias Bank Protection | CS-22 | 4 | 1997 | -1.2 ft | 35,000 | 3.0 ft NGVD-29 | 0-50 |
| Freshwater Bayou Wetlands Protection | ME-04 | 4 | 1998 | -1.0 ft | 28,000 | 4.0 ft NAVD-88 | 0-150 |
| Freshwater Bayou Bank Stabilization | ME-13 | 4 | 1998 | N/A | 23,193 | 3.7-4.0 ft NAVD-88 | N/A |
| Lake Salvador Shoreline Protection Demonstration | BA-15 Phase II | 2 | 1998 | -1.0 to 1.4 ft | 8,000 | Designed at 4.0 ft NAVD-88 built at 2.75 ft NAVD-88 | 100 |
| Perry Ridge Shore Protection | CS-24 | 4 | 1999 | N/A | 12,000 | 3.7 to 4.0 ft NAVD-88 | 60 |
| Jonathan Davis Wetland Protection | BA-20 | 2 | 2001 | N/A | 34,000 | 3.5 ft NAVD-88 | N/A |
| Bayou Chevee Shoreline Protection | PO-22 | 1 | 2001 | N/A | 5,690 | 3.5 ft NGVD-29 | 300 |

*N/A indicates that information was not available.

- Intracoastal Waterway Bank Stabilization and Cutgrass Planting project at Blind Lake was a state only wetland restoration project constructed to prevent the Gulf Intracoastal Waterway (GIWW) and Sweet Lake from coalescing with Blind Lake (LDNR 1992). A limestone foreshore rock dike built at an elevation of +4.0 feet

NGVD-29 was placed 70 feet from the edge of the main channel along 2,339 feet of bank on a six-inch layer of shell and filter cloth. Large stones were used to prevent movement of rocks and to allow sediments and organisms passage. In 1991, two years after project completion an average increase in elevation of 0.32 feet in the area behind the dike was observed along transects from the deposition of suspended sediments. Data indicate that the project was successful in protecting the shoreline at Blind Lake and maintaining the hydrology of the Cameron-Creole watershed.

- The Turtle Cove Shoreline Protection (PO-10) was initiated in 1993 to protect a narrow strip of land in the Manchac Wildlife Management Area which separates Lake Pontchartrain from an area known as “the Prairie” (O’Neil and Snedden 1999). Wind induced waves contributed to a shoreline erosion rate of 12.5 feet per year. A 1,642 foot rock filled gabion was constructed 300 feet from shore at an elevation of 3 feet above mean water level with the goal of reducing erosion and increasing sediment accretion behind the structure. Post construction surveys conducted during the period of October 1994 to December 1997 revealed that the shoreline had prograded at a rate of 3.47 feet per year in the project area. The rate of sediment accretion, as determined from elevation surveys conducted in January 1996 and January 1997, was 0.26 feet per year.

The soils in The Prairie and Turtle Cove area consist of Allemands-Carlin peat which is described as highly erodible organic peat and muck soils (USDA 1972). Due to the weak and compressible nature of the subsurface soils, the gabions settled 0.59 feet in just over two years (October 1994 to January 1997) (O’Neil and Snedden 1999). Also, five years after construction the rock filled gabion structure exhibited numerous breaches and required extensive maintenance (LDNR 1999).

There are also several examples of successful projects involving the use of shoreline protection to stop erosion along navigation channel banks.

- The Freshwater Bayou Wetlands Protection (ME-04) project is positioned on the western bank of Freshwater Bayou Canal across from the proposed TV-11b project (Vincent et al. 1999). Construction of this project was initiated in January 1995 and includes construction of water control structures and a 28,000 linear foot foreshore rock dike designed with a crown elevation of +4.0 feet NAVD-88. Penland et al. (1990) estimated relatively low rates of subsidence and sea level rise, at 0.13 inches per year. Analysis of initial monitoring data suggests that the rock dike reduced wave-induced shoreline erosion after construction. The average rate of shore progradation between June 1995 and July 1996 was measured at 2.2 feet per year while the reference area continued to erode at an average rate of 6.7 feet per year (Raynie and Visser 2002). In contrast, between March 1998 and May 2001, the protected shoreline eroded an average of 2.6 feet per year while the reference area eroded at an average of 10.0 feet per year (Raynie and Visser 2002). Substandard recycled construction material and inadequate funds for maintenance of the structure, which were not disbursed in a timely manner, are believed to be the reason for the increase in erosion rates in the project area (Raynie and Visser 2002).

- The Cameron Prairie National Wildlife Refuge Shoreline Protection (ME-09) project, constructed in 1994, is located in north-central Cameron Parish and includes 350 acres of freshwater wetlands (Barrilleaux and Clark 2002). A 13,200-foot rock breakwater was constructed at an elevation of +3.7 feet NAVD-88, 50 feet from (and parallel to) the northern shore of the GIWW to prevent wave action from eroding the bank and breaching into the interior marsh. Aerial photography and survey points were used to monitor any changes in land to water ratio and shoreline position. Three years after construction results indicate that the project area shoreline advanced 9.8 ± 7.1 feet per year while the reference area retreated 4.1 ± 3.1 feet per year. A two-sample t-test revealed a significant difference was detected between the shoreline change rate and the project reference areas ($P < 0.001$).
- The Clear Marais Bank Protection (CS-22) project was constructed in 1997 at an elevation of +3.0 feet NGVD-29 to prevent breaches in the GIWW shoreline and subsequent erosion of the interior marsh while preventing saltwater intrusion (Miller Draft Report 2001). Approximately 35,000 linear feet of rip-rap was placed 50 feet from the northern shoreline of the GIWW. Results indicate that the foreshore rock dike has been effective in preventing erosion of the GIWW shoreline. A net gain of 13 feet per year occurred behind the rock structure while the reference area continued to erode (Raynie and Visser 2002).

Submerged Aquatic Vegetation

Submerged Aquatic Vegetation plays a crucial role in the littoral zone of aquatic ecosystems (Wetzel 1983). Submerged Aquatic Vegetation dissipates the energy of wind and wave action, reduces the amount of bottom sediment resuspension, serves as effective traps for inorganic and organic particulates, and provides suitable forage for ducks, invertebrates and larval fish (Spence 1982, Foote and Kadlec 1988, Lodge 1991). It is widely understood that the limiting factor controlling the recovery of SAV in lakes is light attenuation (Sager et al. 1998). Submerged aquatic vegetation habitat creation is expected to occur behind the shoreline protection structure in White Lake due to the reduction of turbidity in the shallow open water areas and the resulting increase in overall light penetration.

Summary/Conclusions

Projects such as TV-09, BA-15, CS-22 and ME-09, that were designed to an adequate elevation and located in areas with relatively good soil foundations, were successful in reducing erosion and promoting accretion due to occasional overwash of waves and subsequent deposition of sediment. However, ME-04 and PO-10 were not as successful over the long term due to poor soil foundations, improper design, the use of substandard materials, and/or inadequate maintenance funds.

According to the geotechnical report (USACE 2004) the soil foundation in the Grand Lake Shoreline Protection project area is considered poor. In an effort to reduce the overall pressure on the soil foundation, the structure will initially be built at an elevation of +3.0 feet NAVD-88. A maintenance lift, which will raise the structure elevation to an approximate height of +3.25 feet NAVD-88, is expected three years post-construction. There is some concern that two years after initial construction the structure will sink below mean water level (+1.45 ft

NAVD-88), one year prior to the scheduled maintenance lift (year three). However, the structure will be submerged for a relatively short period of time before the scheduled lift at year three is implemented and it was determined by the project team that the benefits of the project would not be significantly reduced. In addition, the dredged spoil placed landward of the structure during construction will offer additional protection to the Grand Lake shoreline.

VII 95% Design Review Recommendations

Based on information gathered from similar restoration projects, engineering designs and related literature, the proposed strategies in the Grand Lake Shore Protection project will likely achieve the desired goals. At this time, the Louisiana Department of Natural Resources, Coastal Restoration Division recommends that the Grand Lake Shoreline Protection project be considered for CWPPRA Phase 2 authorization.

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| <p>This document reflects the current project design as of the 95% Design Review meeting, incorporates all comments and recommendations received following the meeting, and is current as of August 31, 2004.</p> |
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Enclosure 4-J

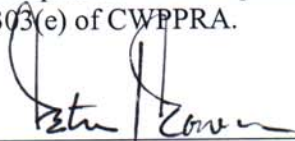
SECTION 303(e) DETERMINATION, CWPPRA

Project: Grand Lake Shoreline Protection Project, Cameron Parish, Louisiana

In accordance with section 303(e) of the Coastal Wetlands Planning, Protection and Planning Act, it has been determined that appropriate land rights will be acquired for construction, operation and maintenance of the project, subject to such terms and conditions as necessary to ensure that wetlands restored, enhanced or managed through this project will be administered for the long-term conservation of the lands and waters and the dependent fish and wildlife population. The proposed real estate rights to be acquired are legally sufficient and meet the long-term conservation objectives discussed above.

By letter dated July 6, 2004, Mr. W. Britt Paul of the Natural Resources Conservation Service advised that overgrazing does not occur on project lands or lands affected thereby, nor does he see the potential for grazing. If overgrazing should occur in the future, a grazing plan must be established for the project.

Accordingly, by the authority delegated to me by the Secretary of the Army, and given compliance with the provisions set forth above, I approve the project in accordance with Section 303(e) of CWPPRA.



Peter J. Rowan
Colonel, U.S. Army
District Engineer

Date: 17 Aug 04

Enclosure 4-K



Natural Resources Conservation Service
3737 Government Street
Alexandria, LA 71302

July 6, 2004

Mr. Chris Monnerjahn
U.S. Army Corps of Engineers
New Orleans District
Planning and Project Management
Coastal Restoration Branch
P.O. Box 60267
New Orleans, Louisiana 70160-0267

Dear Mr. Monnerjahn:

RE: Grand Lake Shoreline Protection (ME-21)

I am in receipt of your request for an overgrazing determination for the Grand Lake Shoreline Protection (ME-21). I contacted our local district conservationist and our state resource conservationist to discuss the grazing in the project area. Currently, livestock are not grazing in the area nor do we see a potential for grazing once the project is installed. Therefore, it is our opinion that overgrazing is not a problem in this project area. If you have any questions, please let me know.

Sincerely,

A handwritten signature in dark ink, appearing to read "W. Britt Paul", is written above the typed name.

W. Britt Paul
Assistant State Conservationist
for Water Resources and Rural Development

cc: Bruce Lehto, Area Conservationist, NRCS, Leesville, Louisiana
Charles Starkovich, District Conservationist, NRCS, Lake Charles, Louisiana
Kevin Blomquist, State Grazing Lands Specialist, NRCS, Alexandria, Louisiana
John Jurgensen, Civil Engineer, NRCS, Alexandria, Louisiana

Enclosure 4-L

Enclosure 4-O

PRIORITIZATION FACT SHEET

Revised as of August 15, 2004

(Eng. and Env. Workgroups' review completed on August 9, 2004)

Project Name and Number: Grand Lake Shoreline Protection; ME-21



Goals: 1) stop shoreline erosion along the South Shore of Grand Lake from Superior Canal to Tebo Point. 2) promote accretion between the breakwater and the shore.

Proposed Solution:

A final design has been developed and is recommended for construction. That design consists of approximately 37,800 linear feet of stone dike stretching from Superior Canal to the mouth of Catfish Lake with an option to place up to an additional 5,700 feet of dike to the west of the base project footprint (option reach). The Technical Committee and Task Force will be given the option to fund the increased length. This prioritization fact sheet covers both funding alternatives up for consideration. The rock dike will be situated along the -1.0-ft NAVD 88 contour in approximately 2.0 feet to 3.0 feet of water, stage dependant. The dike crown will be constructed to an elevation of +3.0 NAVD88 (+/-0.25') and have a width of approximately 4.0 feet. The dike will have front and back side-slopes of 1.0-foot vertical on 1.5-foot horizontal. The 37,800 lf of rock dike will benefit 445 acres of existing fresh marsh and 717 acres of open water (total 1,162 acres). Shoreline loss will be prevented and some marsh will accrete south of the breakwater so at the end of 20 years, 495 acres of marsh will be protected/created. The proposed extension around Tebo Point will benefit an additional 45 acres of fresh marsh and an additional 32 acres of open water. At the end of 20 years, an additional 45 acres will be protected/created. There will be a low degree of risk associated with this project because monitoring has indicated that breakwaters significantly reduce erosion. The project should continue providing benefits more than 20 years after construction because there is a scheduled maintenance event in year 3 and year 15.

Proposed Prioritization Criteria Scores and Justification

I. Cost Effectiveness (cost/net acre)

Grand Lake SP without extension:

The estimated total fully funded project cost provided by Mr. Allan Hebert, chair of the Economics Workgroup, on July 30, 2004 is \$13,835,000. The project benefits 495 total acres. Therefore, the cost per acre for this project is \$27,949/acre.

The proposed score for this criterion is 7.5.

Grand Lake SP with extension:

The estimated total fully funded project cost provided by Mr. Allan Hebert, chair of the Economics Workgroup, on July 30, 2004 is \$15,205,000. The project benefits 540 (495+45) total acres. Therefore, the cost per acre for this project is \$28,157/acre.

The proposed score for this criterion is 7.5.

II. Area of Need, High Loss Area

According to a comparison of the 1978-79 aerial photography with 1997-98 photography, shoreline erosion rates in this area vary from 11 to 32 feet per year. The project is located in the Mermentau Basin. According to Kevin Roy's spreadsheet, the FWOP loss rate is 25 ft/year. The score will be the same with or without the extension.

Grand Lake SP without extension: **The proposed score for this criterion is 7.5.**

Grand Lake SP with extension: **The proposed score for this criterion is 7.5.**

III. Implementability

The project has no obvious issues affecting implementability. The score will be the same with or without the extension.

Grand Lake SP without extension: **The proposed score for this criterion is 10.**

Grand Lake SP with extension: **The proposed score for this criterion is 10.**

IV. Certainty of Benefits

The project is an inland shoreline protection project. The score will be the same with or without the extension.

Grand Lake SP without extension: **The proposed score for this criterion is 10.**

Grand Lake SP with extension: **The proposed score for this criterion is 10.**

V. Sustainability of Benefits

According to the prioritization procedures, the full project benefits are not expected to continue beyond TY 20 because the breakwater would not be maintained beyond the end of the CWPPRA project life. It is, however, anticipated that the breakwater would continue to perform fully from TY21 - TY27, would only prevent 75% of the shoreline erosion between TY28 and TY30.

Grand Lake SP without extension:

TY21-TY27 0 ft/yr eroded = 0 ft/yr X 37,800 ft = 0 acres

TY28-TY30 6.15 ft/yr eroded = 6.15 ft/yr X 37,800 ft = 232,470 ft² ÷ 43560 = 5.34 ac/yr

| Target Year | Baseline Erosion 24.6 ft/yr |
|-------------|------------------------------------|
| 20 | 495 acres |
| 21 | 495 acres |
| 22 | 495 acres |
| 23 | 495 acres |
| 24 | 495 acres |
| 25 | 495 acres |
| 26 | 495 acres |
| 27 | 495 acres |
| 28 | 495 ac - 5.34 ac = 489.66 acres |
| 29 | 489.66 ac - 5.34 ac = 484.32 acres |
| 30 | 484.32 ac - 5.34 ac = 478.98 acres |

The net change in acres of marsh from TY 20 to TY 30 = -16.02 (495-478.98), which is a 3.24% decrease (16.02 acres/495 acres = 0.0324).

Grand Lake SP without extension: **The proposed score for this criterion is 10.**

Grand Lake SP with extension:

TY21-TY27 0 ft/yr eroded = 0 ft/yr X 43,500 ft = 0 acres

TY28-TY30 6.15 ft/yr eroded = 6.15 ft/yr X 43,500 ft = 267,525 ft² ÷ 43560 = 6.14 ac/yr

| Target Year | Baseline Erosion 24.6 ft/yr |
|-------------|-----------------------------|
| 20 | 540 acres |
| 21 | 540 acres |
| 22 | 540 acres |
| 23 | 540 acres |
| 24 | 540 acres |
| 25 | 540 acres |
| 26 | 540 acres |
| 27 | 540 acres |

| | |
|----|------------------------------------|
| 28 | 540 ac – 6.14 ac = 533.86 acres |
| 29 | 533.86 ac – 6.14 ac = 527.72 acres |
| 30 | 527.72 ac – 6.14 ac = 521.58 acres |

The net change in acres of marsh from TY 20 to TY 30 = -18.42 (540-521.58), which is a 3.41% decrease (18.42 acres/540 acres = 0.0341).

Grand Lake SP with extension: **The proposed score for this criterion is 10.**

VI. Increasing riverine input in the deltaic plain or freshwater input and saltwater penetration limiting in the Chenier plain

The project will not affect freshwater inflow or salinity. The score will be the same with or without the extension.

Grand Lake SP without extension: **The proposed score for this criterion is 0.**

Grand Lake SP with extension: **The proposed score for this criterion is 0.**

VII. Increased sediment input

The project will not increase sediment input over that presently occurring. The score will be the same with or without the extension.

Grand Lake SP without extension: **The proposed score for this criterion is 0.**

Grand Lake SP with extension: **The proposed score for this criterion is 0.**

VIII. Maintaining or establishing landscape features critical to a sustainable ecosystem structure and function

The project serves to protect, for at least the 20-year life of the project, the Grand Lake shoreline (a landscape feature), which is critical to the mapping unit. See prioritization criteria. The score will be the same with or without the extension.

Grand Lake SP without extension: **The proposed score for this criterion is 5.**

Grand Lake SP with extension: **The proposed score for this criterion is 5.**

Weighting per Criteria:

Grand Lake SP without extension:

Total Prioritization Score: 66.25

| CRITERION | | Weight | Score | Weighted Score |
|--------------|----------------------------|--------|-------|----------------|
| I | Cost-Effectiveness | 2.0 | 7.5 | 15 |
| II | Area of Need | 1.5 | 7.5 | 11.25 |
| III | Implementability | 1.5 | 10 | 15 |
| IV | Certainty of Benefits | 1.0 | 10 | 10 |
| V | Sustainability | 1.0 | 10 | 10 |
| VI | HGM Riverine Input | 1.0 | 0 | 0 |
| VII | HGM Sediment Input | 1.0 | 0 | 0 |
| VIII | HGM Structure and Function | 1.0 | 5 | 5 |
| TOTAL | | | | 66.25 |

Grand Lake SP with extension:

Total Prioritization Score: 66.25

| CRITERION | | Weight | Score | Weighted Score |
|--------------|----------------------------|--------|-------|----------------|
| I | Cost-Effectiveness | 2.0 | 7.5 | 15 |
| II | Area of Need | 1.5 | 7.5 | 11.25 |
| III | Implementability | 1.5 | 10 | 15 |
| IV | Certainty of Benefits | 1.0 | 10 | 10 |
| V | Sustainability | 1.0 | 10 | 10 |
| VI | HGM Riverine Input | 1.0 | 0 | 0 |
| VII | HGM Sediment Input | 1.0 | 0 | 0 |
| VIII | HGM Structure and Function | 1.0 | 5 | 5 |
| TOTAL | | | | 66.25 |

Preparers of Fact Sheet

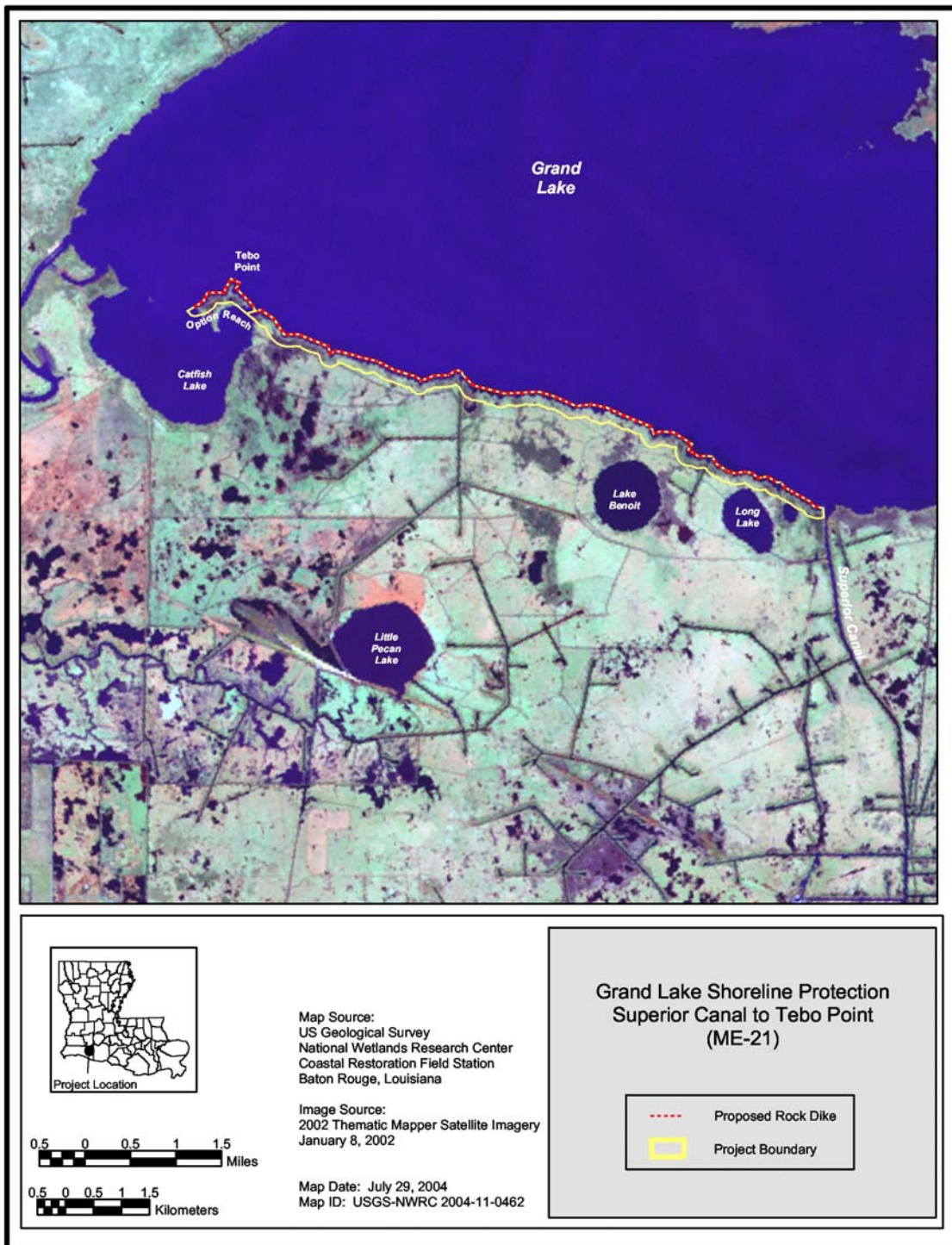
Chris Monnerjahn, USACE PM, 504-862-2415, chris.monnerjahn@mvn02.usace.army.mil

Kenneth Duffy, LDNR PM, 225-342-4106, kend@dnr.state.la.us

References

None cited

Project Map



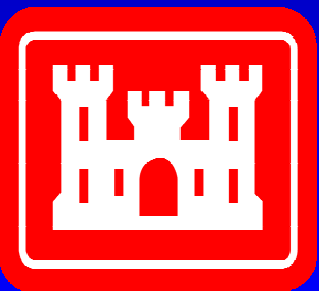
Enclosure 4-P

CWPPRA Grand Lake Shoreline Protection (ME-21)

Task Force Meeting

October 13, 2004

Baton Rouge, LA



U.S. Army
Corps of Engineers
New Orleans District



Project Overview

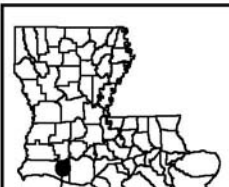
Project Location: Region 4, Mermentau Basin, Cameron Parish, South shore of Grand Lake.

Problem: An average shoreline erosion rate of 25 ft/yr.

Solution: Construction of 37,800 lf of rock dike stretching from Superior Canal to the mouth of Catfish Lake with an option to place up to an additional 5,700 feet of dike around Tebo Point, to the west of the base project footprint.

Goals:

- 1) stop shoreline erosion from Superior Canal to Tebo Point.
- 2) promote accretion between the breakwater and the shore.



Map Source:
US Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station

Grand Lake Shoreline Protection
Superior Canal to Tebo Point
(ME-21)

Project Benefits

- The 37,800 lf of rock dike will benefit 445 acres of existing fresh marsh and 717 acres of open water (total 1,162 acres). Shoreline loss will be prevented and some marsh will accrete south of the breakwater so that at the end of 20 years, 495 acres of marsh will be protected/created.
- The proposed extension around Tebo Point will benefit an additional 45 acres of fresh marsh and an additional 32 acres of open water. At the end of 20 years, an additional 45 acres will be protected/created.
- All total the project will protect/create over 540 acres of marsh.

Project Benefits (continued)

- We are creating an additional 90 acres of marsh behind the rock dike as a result of using the flotation channel material beneficially that we did NOT claim credit for in the WVA.
- If you count the additional 90 acres of marsh created, then the project would protect/create approximately 630 acres of marsh.



Grand Lake Shoreline Protection Project Comparison

The Present (without option) vs. The Present (with option)

| | Phase II Project Info | Phase II Project Info | |
|--------------------------|-------------------------|-------------------------|----------------------|
| | | | Difference |
| Description | (without ext. option) | (with ext. option) | |
| | | | |
| Length: | 37,800 lf | 43,500 lf | Increase of 5,700 lf |
| Placement Location: | @ -1.0' NAVD 88 contour | @ -1.0' NAVD 88 contour | Same |
| Crest El.: | +3.0' NAVD88 | +3.0' NAVD88 | Same |
| Crest Width: | 4 ft | 4 ft | Same |
| Side Slopes: | 1V:1.5H | 1V:1.5H | Same |
| Stone Size: | 650# max | 650# max | Same |
| Fish Dip Spaces: | every 1,000 lf | every 1,000 lf | Same |
| | | | |
| | | | |
| Project Benefits: | 495 net acres | 540 net acres | 45 net acres more |
| | | | 9.1% |
| | | | |
| Total Fully Funded Cost: | \$13,835,000 | \$15,205,000 | \$1,370,000 |
| | | | 9.9% |

Grand Lake Shoreline Protection Project Comparison

The Present (with option) vs. PPL 11

| | Project Info at the time of Phase 0 approval (PPL 11) | Project Info at 95% Design Review Mtg. (with ext. option) | Difference |
|--------------------------|---|---|-------------------------------------|
| Description | | | |
| Length: | ~39,000 lf | 43,500 lf | Increase of 4,500 lf |
| Placement Location: | @ -2' NGVD contour | @ -1.0' NAVD 88 contour | similar, just difference in datums. |
| Crest El.: | +2.0' NGVD | +3.0' NAVD88 | similar, just difference in datums. |
| Crest Width: | 4 ft | 4 ft | |
| Side Slopes: | 1V:3H | 1V:1.5H | revised based on geotech info |
| Stone Size: | 650# max | 650# max | |
| Fish Dip Spaces: | every 1,000 lf | every 1,000 lf | |
| | | | |
| Project Benefits: | 495 net acres | 540 net acres | 45 net acres more 9.09% |
| | | | |
| Total Fully Funded Cost: | \$13,562,500 | \$15,205,000 | 12.1% |
| | | | |

Top Ten Reasons to Fund Grand Lake SP now!

- #10: It's P-score ranks 4th out the possible 11 projects up for approval.
- #9: You really like rock.
- #8: The project protects/creates over 540 acres of marsh over the project life.
- #7: It has a NO Oyster issues!!
- #6: Construction can begin well within 6 months.

Top Ten Reasons to Fund Grand Lake SP now!

- #5: The shoreline is eroding at an avg. rate of 25 ft/yr.
- #4: It is not broken up into Construction Units.
- #3: It has the support of 3 agencies just like North Lake Mechant and GIWW.
- #2: I had all my paperwork submitted on time.
- #1: So I do not have to act like another fellow CWPPRA project manager by crying, begging, and groveling for the project.

Questions?

